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ABSTRACT

This is the second report on the school achievement of children six to eleven years of age in the noninstitutionalized population of the United States, as estimated from the Reading and Arithmetic subtest data of the Wide Range Achievement Test obtained in the Health Examination Survey of 1963-65. It contains findings by selected demographic and socioeconomic variables. A probability sample of the nation's noninstitutionalized children six to eleven years of age was selected and examined. The examination focused primarily on health factors related to growth and development. It included an examination by a pediatrician, assisted by a nurse; an examination by a dentist; tests administered by a psychologist; and, a variety of tests and measurements by specially trained technicians. Field collection operations started in July 1963 and were completed in December 1964. There were 7119 children examined. The examinees were closely representative of the roughly 24 million noninstitutionalized children, six to eleven years of age, in the United States. The psychological test battery included the Vocabulary and Block Design subtests of the Wechsler Intelligence Scale for Children, the Draw-A-Person test, five cards of the Thematic Apperception Test, and the reading and arithmetic subtests of the Wide Range Achievement Test. (Author/JM)

Series 11 reports present findings from the National Health Examination Survey, which obtains data through direct examination, tests, and measurements of samples of the U.S. population. Reports 1 through 37 relate to the adult program; additional reports concerning this program are forthcoming and will be numbered consecutively. The present report is one of a number of reports of findings from the children and youth programs, Cycles II and III of the Health Examination Survey. These reports, emanating from the same survey mechanism, are being published in Series 11 but are numbered consecutively beginning with 101. It is hoped this will guide users to the data in which they are interested.

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Data from the
NATIONAL HEALTH SURVEY

Series 11
Number 109

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School Achievement of Children by Demographic and Socioeconomic Factors

United States

Findings from the Reading and Arithmetic subtests of the Wide Range Achievement Test by age, sex, race, region, size of place of residence and population change from 1950 to 1960, family income, education of parent, and grade in school----shown in terms of raw scores, standard scores, and grade equivalents.

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COOPERATION OF THE BUREAU OF THE CENSUS

In accordance with specifications established by the National Health Survey, the Bureau of the Census, under a contractual agreement, participated in the design and selection of the sample, and carried out the first stage of the field interviewing and certain parts of the statistical processing.

Vital and Health Statistics-Series 11-No. 109

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SCHOOL ACHIEVEMENT OF CHILDREN
BY DEMOGRAPHIC AND SOCIOECONOMIC FACTORS

K. Warner Schaie, Ph.D., *University of West Virginia*
Jean Roberts, *Division of Health Examination Statistics*

INTRODUCTION

This is the second report on the school achievement of children 6-11 years of age in the noninstitutionalized population of the United States as estimated from the Reading and Arithmetic subtest data of the Wide Range Achievement Test (WRAT) obtained in the Health Examination Survey of 1963-65. It contains findings by selected demographic and socioeconomic variables.

The National Center for Health Statistics, of which the Health Examination Survey is a major program, was authorized under the National Health Survey Act of 1956 by the 84th Congress as a continuing Public Health Service function to determine the health status of the population.

Three different survey programs are utilized in the National Health Survey.[1] The Health Interview Survey, in which health information is collected from samples of people by household interview, is concerned primarily with the impact of illness and disability within the various population groups. The Health Resource program obtains health data as well as health resource and utilization information through surveys of hospitals, nursing homes, and other resident institutions and the entire range of personnel in the health occupations. In the Health Examination Survey, from which the data in this report were obtained, health data are collected by direct physical examination, tests, and measurements performed on samples of the population. The latter program provides the best way of obtaining actual diagnostic data on the prevalence of certain medically defined illnesses. It is the only way to secure information on unrecognized and undiagnosed conditions and on a variety of physical, physiological, and psychological measures within the population. It also provides demographic and socioeconomic data on the sample population under study to which the examination findings may be related.

The Health Examination Survey is conducted as a series of separate programs or cycles each of which is limited to some specific segment of the population of this country and to specified aspects of health. In the first cycle, data were obtained on the prevalence of certain chronic diseases and on the distribution of various measurements and other physical and physiological characteristics in a defined adult population as previously described.[2,3]

In the second cycle, on which this report is based, a probability sample of the Nation's noninstitutionalized children 6-11 years of age was selected and examined. The examination focused primarily on health factors related to growth and development. It included an examination by a pediatrician, assisted by a nurse; an examination by a dentist; tests administered by a psychologist; and a variety of tests and measurements by specially trained technicians. A previous report contains a description of the survey plan, sample design, examination content, and operation of the second cycle of this survey.[4]

Field collection operations for this cycle started in July 1963 and were completed in December 1965. There were 7,119 children ex-

amined, or 96 percent of the total sample of 7,417 children selected. The examinees as well as the total sample were closely representative of the roughly 24 million noninstitutionalized children 6-11 years of age in the United States.[4]

During his single visit, each child was given a standardized examination by the examining team in the mobile units especially designed for use in the survey. Prior to the examination, demographic and socioeconomic data on household members as well as medical history, behavioral, and related data on the child to be examined were obtained from one of his parents. Ancillary data for the child on grade placement, teacher's ratings of his behavior and adjustment, and health problems known to the teacher were requested from the school. Birth certificates were also obtained to verify the child's age and information related to him at birth.

Statistical notes on survey design, reliability of the data, and sampling and measurement error may be found in appendix I. Definitions of the demographic and socioeconomic variables included in the report are contained in appendix II.

THE PSYCHOLOGICAL TEST BATTERY

A battery of tests, designed to assess some aspects of mental growth and behavioral development of children, was included as part of the standardized examination. A constraint placed on selection of the battery was that it could be administered adequately within the space of 1 hour. The battery selected consisted of verbal and nonverbal tests of or related to intelligence as well as other tests designed to assess various personality factors. The specific measures for the estimation of intelligence consisted of the Vocabulary and Block Design subtests of the Wechsler Intelligence Scale for Children and the Draw-a-Person Test. For the assessment of personality factors, five cards of the Thematic Apperception Test were used. School achievement estimates in the basic skills of reading and arithmetic computation were obtained using these two subtests of the Wide Range Achievement Test. These latter tests were included to make possible the assessment of their relation to various findings on the physical examination as well as the relationship among measures of school achievement, intellectual status, and the social and emotional adjustment of the child. All testing was done by psychologists who had been trained at least at the level of the master's degree and who had previous experience in administering tests to children.

A previous report[5] contains a comprehensive evaluation of the psychological test battery as used in this cycle of examinations. The rationale for including a psychological component in the Health Examination Survey designed to assess the growth and development of children and for the selection of the specific tests used here is contained in the program description for this cycle.[4]

The findings in this report, as indicated, are based on the Reading and Arithmetic subtests of the 1963 edition of the WRAT. This test was selected because it had been widely used and generally well accepted as an individually administered school achievement test. Further, it had been standardized and could be individually administered within the available time and the framework of the examination. Since at the start of this cycle validation data were available only for the 1946 edition[6] and not for the 1963 edition,[7] which was used here, a special validation study of the latter was made by Schaie.[8]

The two subtests of the WRAT were administered in the Health Examination Survey in accordance with the Manual of Instructions for the 1963 Revised Edition of the test[7] with certain modifications to insure uniformity of testing. More detailed information on the content of these subtests, the field procedures used in administering them and the quality control measures employed to ensure uniformity and precision have been described previously.[9]

FINDINGS

The first report on school achievement of noninstitutionalized children 6-11 years of age in the United States based on data from the Health Examination Survey of 1963-1965[9] showed increases in mean raw scores with age for both the Reading and Arithmetic subtests. On the Reading

subtest mean scores increased with age but at a decreasing rate from 25.7 points at 6 years to 69.4 points at 11 years out of the possible score of 100 points. For the Arithmetic subtest, mean raw scores also increased with age from 16.9 points at 6 years to 37.4 points at 11 years out of a total possible 63 points. The increment on this subtest was substantially smaller up to age 11 and more constant throughout the age range than the one for the Reading subtest. The variability for the Reading subtest scores increased with age but not consistently throughout the age range, there being a slight dropoff at age 11. Variability on the Arithmetic subtest was somewhat greater for the 10- and 11-year-olds than for the younger children of 6-9 years.

School achievement findings are analyzed in this report in relation to region, race, size of place of residence and population change in size from 1950 to 1960, grade placement of the child in school, education of the parent who was considered head of the household, and annual family income. In those instances where the sample size was sufficiently large, findings are reported also by region and race for each of the other variables considered.

The number of children aged 6-11 years within these subgroups is shown in table I and the number of examinees in table I, appendix I. While findings in further detail by income, education, and race (for example) are also of interest here, the sample size of examinees was not large enough to provide reliable estimates of mean scores throughout, even for the total age group 6-11 years, and was substantially more unstable or erratic by age. Hence, in lieu of this, multiple regression methods have been used to determine roughly the overall degree of interrelationship of these various demographic and socioeconomic factors with school achievement as measured here.

Findings are discussed first in terms of raw scores obtained on each of the two WRAT subtests. Then, since it is readily apparent from the mean raw scores and standard deviations of the raw scores that the range of items answered increased with age throughout, conversion is made to standard scores (setting the mean at 100 and the standard deviation at 15) which permit comparisons of relative standing between ages and the findings are next presented in this manner. Finally the standard scores from both subtests have been combined and restandardized to give a single estimate of school achievement, which is also considered in relation to these demographic and socioeconomic factors. In addition, findings are presented in terms of grade equivalents of these raw scores—i.e., information is given to show the grade in which the given raw score would represent average achievement.

Region

School achievement raw scores were highest on the average for children in the Midwest and lowest in the South (figure 1 and table 2), the differences being statistically significant on both the Reading (6.3 points) and the Arithmetic (1.8 points) subtests for all ages combined. Children in the Northeast performed slightly better than those in the West but both groups were nominally below their counterparts in the Midwest. In particular the differences in ratings between the Midwest and Northeast were negligible. No consistent regional differences were found in the variability of scores obtained on either test part or in the relative variability in relation to the mean.

By age, children did significantly better on the average in the Midwest than in the South from age 7 through 11 years on the Reading subtest and from 7 through 10 years on Arithmetic. Differences on both test parts among 6-year-old children in the four regions were negligible.

For boys as a group, mean scores on the Reading subtest were significantly lower in the South than in the other three regions. On the Arithmetic subtest the same pattern was evident except that the differences were statistically significant only between those in the South and two of the other regions—the Midwest and the Northeast. The pattern, however, was not consistent throughout the age range. Boys 7-11 years of age from the Midwest and Northeast scored significantly higher on the average (5.0 to 9.6 points more) on the Reading subtest than those in the South. Only the boys of 8, 9, and 11 years from the West did substantially better than those in the South. Regional differences on the Reading subtest among 6-year-old boys were

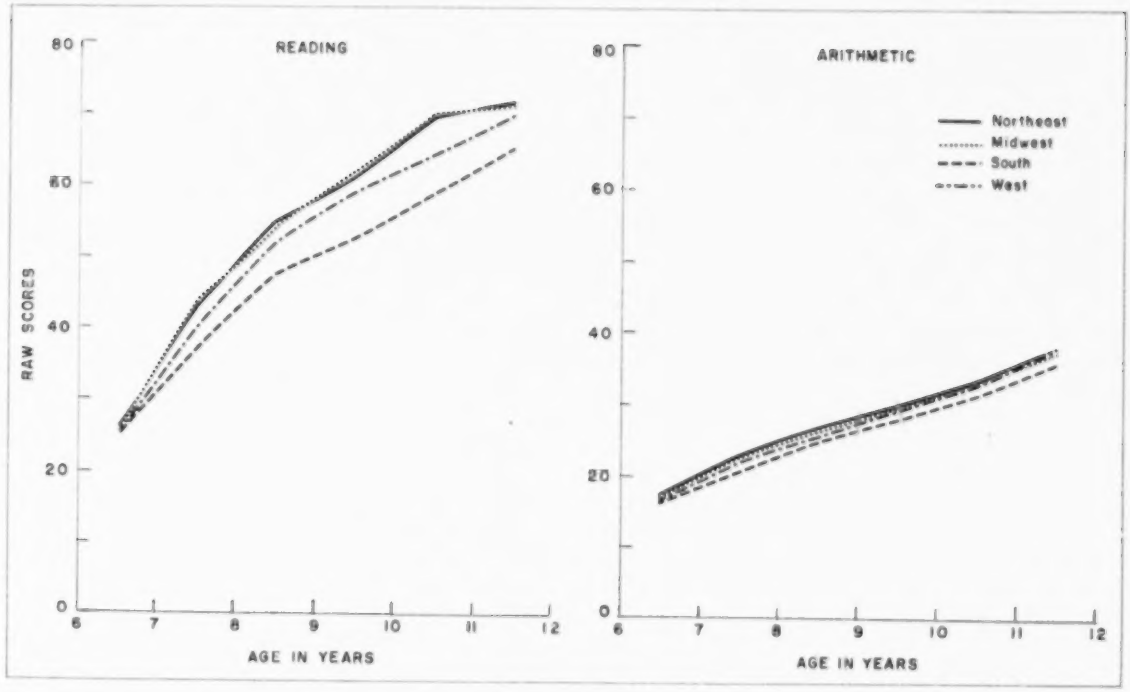

Figure 1. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children by age and region, United States.

negligible. On the Arithmetic subtest a similar pattern will be noted. However, the differences from 7 through 11 years are consistently statistically significant only between boys in the Northeast and the South.

Girls show a regional pattern in school achievement skills on these subtests roughly similar to that for boys. Average scores on the Reading subtest in the Midwest and Northeast significantly exceeded those in the South for the total group and by age for those 7 years and older. Only at ages 9-11 years did Western girls substantially outperform their Southern counterparts. On the Arithmetic subtest regional differences in performance among girls of all ages and by single years were generally negligible. The groups from the South, however, scored slightly lower on the average than those from the other three regions.

When conversion is made to standard scores (with a mean of 100 and standard deviation of 15, based on the total population at each age level), Southern children show consistently lower ratings in school achievement on each subtest than do those from other regions with one exception (table 3). Six-year-old children in the South on the Reading subtest obtained scores as high on the average as those in the other regions. Children from the West rated about average at each age, while those in the Northeast and Midwest rated average to slightly above.

The combined school achievement rating shows children in the Northeast and Midwest to be about the same level on the average at each year of age with those from the West only slightly behind. Southern children at age 6 rate only very slightly below the national average but from ages 7-11 years drop 4 to 5 standard score points below that average.

It is of interest also to consider regional variation in grade level equivalents computed for children at each age under consideration here (table 4). For the total sample there is almost no difference for Reading at age 6. From age

7 on, children from the South fall progressively further behind those from other regions until by age 11 the difference is the equivalent of one full grade. Regional differences in grade level are somewhat more pronounced for girls than boys on Reading. On Arithmetic, the South also lags behind, but for this subtest differences do not exceed 0.5 grade at any age. Similar findings are shown for the composite achievement score.

Further regional differences will be reported and analyzed for the variables of race, size of place of residence and rate of population change, grade level of children, education of parents, and family income in other sections of this report.

Race

White children consistently surpassed their Negro counterparts in school achievement as rated by either of the subtests used (figure 2 and table 5). The mean differences were large enough to be statistically significant consistently throughout the age range. There was slightly less variation among scores attained by Negro children than white children on the Reading subtest and slightly more variability on the Arithmetic subtest. These differences, however, could easily have occurred through chance alone in a sample of the size and design used in this survey. Moreover, this pattern of racial differences in variability was not consistent throughout the age range examined—white children were the more variable at all but age 9 on the Reading subtest and at 10 and 11 years on the Arithmetic. In relation to the size of their mean scores, however, Negro children were relatively more variable at each age on Reading and at ages 6-9 on the Arithmetic subtest.

On the Reading subtest, mean differences increased with age from 4.4 points at 6 years to 13.4 points at 10 years and then dropped

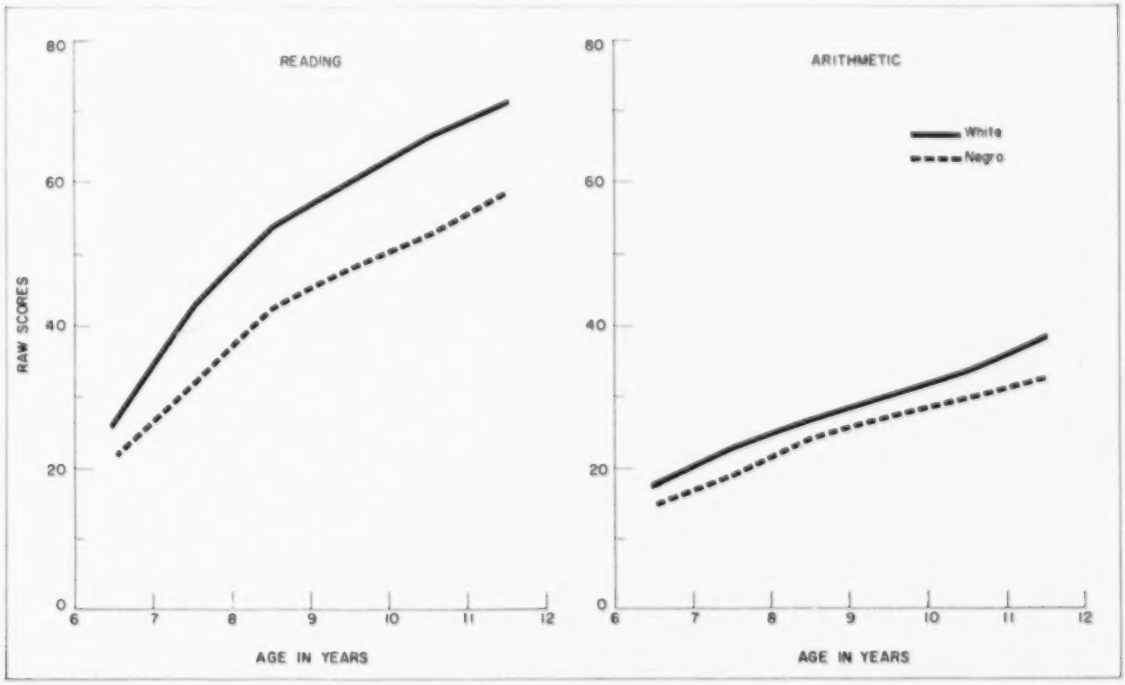

Figure 2. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for white and Negro children by age, United States.

slightly to 12.6 points at 11 years. For Arithmetic, the differences increased steadily with age from 8 years on.

A similar pattern of mean racial differences was found among both boys and girls, with the exception of 10-year-old boys on the Reading subtest, where the mean differences between white and Negro children, though highly statistically significant, were somewhat less than those for boys at ages 9 and 11.

As for all races combined, girls consistently scored higher than boys on the average among both Negro and white children (figures 3 and 4). The mean differences were large enough to be statistically significant on the Reading subtest for white children 7-9 and 11 years and at 8 and 11 years for Negro children. On the Arithmetic subtest the mean differences in scores between boys and girls within the two races were negligible except at 11 years, where Negro girls performed significantly better than Negro boys.

The other racial group of children, which includes Orientals and American Indians among others, on the average attained scores as high or higher than those for white children. However, the number of such children in the country and hence in the sample was so small—less than 2 percent—that the differences could easily be due to chance alone and cannot be considered as representing any real differentials in school achievement for these children.

A similar pattern of racial differences in school achievement may be seen when raw scores are converted to standard scores (table 6). White children showed average standard scores on both subtests that were consistent throughout the age range at 101 or 102. Standard scores for Negro children were significantly lower than white at each year of age and fluctuated considerably more from one year of age to the next. On the Reading subtest, 6-year-old Negro children rated higher on the average than older children

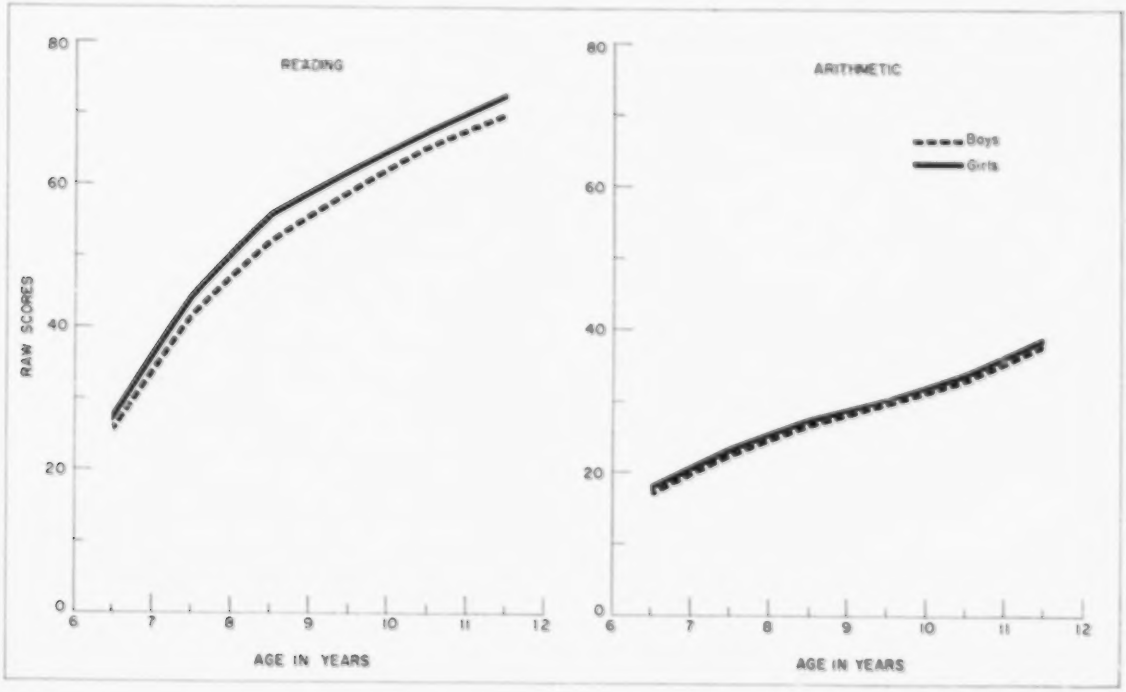

Figure 3. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for white children by age and sex, United States.

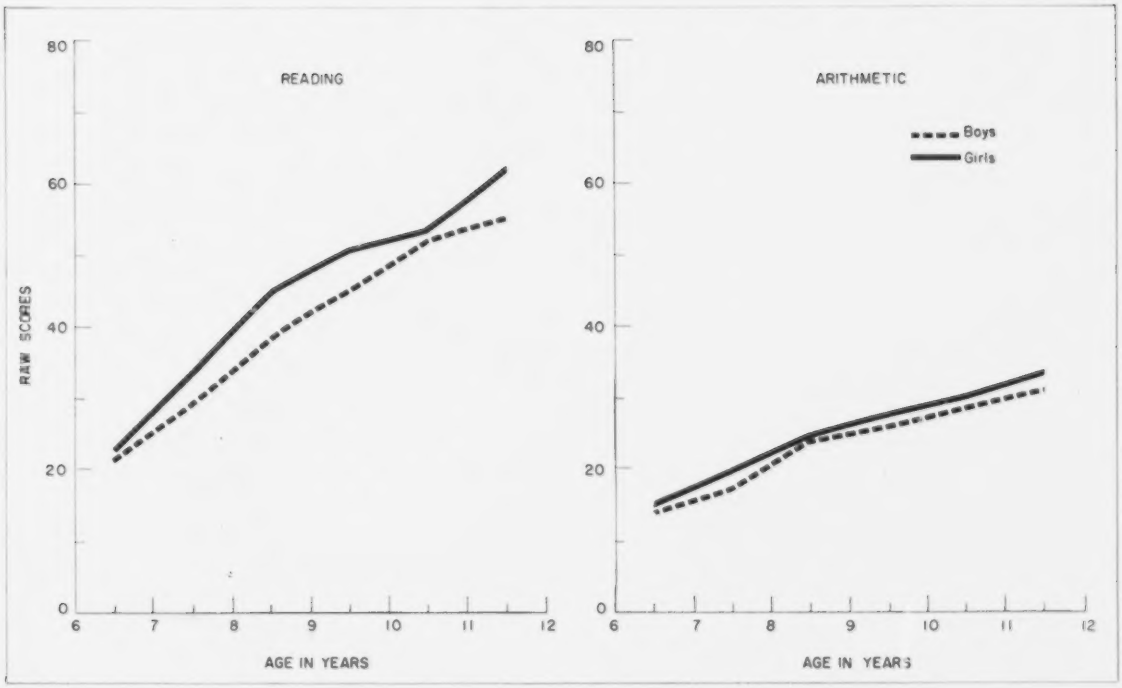

Figure 4. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for Negro children by age and sex, United States.

of this race—95 compared with 88 to 89 for those of 7-11 years. Mean standard scores on the Arithmetic subtest for Negroes ranged from a low of 87 at age 7 to 92 at ages 6 and 8 years. White-Negro differences were smallest at 6 years—6 standard score points on Reading and 9 on Arithmetic—but remained fairly consistent at 13 to 14 points on both subtests from 7 years on. Only at age 10 on Arithmetic did the difference drop below this.

The single rating on school achievement, based on the combination of the two subtests, also shows this same pattern of racial differences. White children obtained average standard scores of 101 or 102 throughout the age range. Average standard scores for Negro children ranged from a low of 88 at 7 years to a high of 94 at 6 years. For those Negro children 8-11 years of age standard score averages varied between 88 and 90 about 12 to 14 points below white children of the corresponding age.

The above findings suggest that, in general, Negro children were found to perform from one-third of a standard deviation to one standard deviation below white children. These differences are statistically highly significant, but to understand their impact fully it is necessary to translate these data into terms directly relevant to the educational setting. To permit such analysis, racial differences in school achievement were next analyzed in terms of grade level equivalents of the average scores for each subtest and for the combined ratings (table 7).

In terms of grade level equivalents Negro children at age 6 were only negligibly below white children on Reading, but the difference increased steadily with age until by 11 years they lagged 2.1 grade levels behind their white counterparts. On Arithmetic Negro children lagged 0.7 grade levels below white children at age 6, with the difference increasing steadily to a grade level deficit of 1.5 by age 11.

A similar pattern of racial differences was found throughout the country. In each of the four regions, white children surpassed Negro children in school achievement as rated by either the Reading or Arithmetic subtest (figure 5 and table 8 and 9). This trend was found for each age level for both boys and girls with two minor exceptions—in the West the 6-year-old Negro girls on the Reading subtest and in the Midwest the 8-year-old Negro girls on the Arithmetic subtest very slightly exceeded the average scores for their white counterparts. As expected from the trend in raw scores, white children in each region rated higher in terms of standard scores than did Negro children (table 10). With the exception of the 6-year-old group, white children in the South rated slightly below average in school achievement at each year of age, those in the West about average, and those in the Northeast and Midwest slightly above average. Negro children rated below average in each of the regions at each year of age. Without exception, school achievement ratings of Negro children in the South were lower than in the other three regions. Here again while the differences in some instances were fairly sizeable, they were in general not statistically significant because of the smallness of this part of the sample.

Among white children, those from the Midwest and the Northeast rated significantly higher on the Reading subtest than those from the South for all ages combined and for single years of age from 7 through 11 years. No significant regional differences were found in average raw scores on

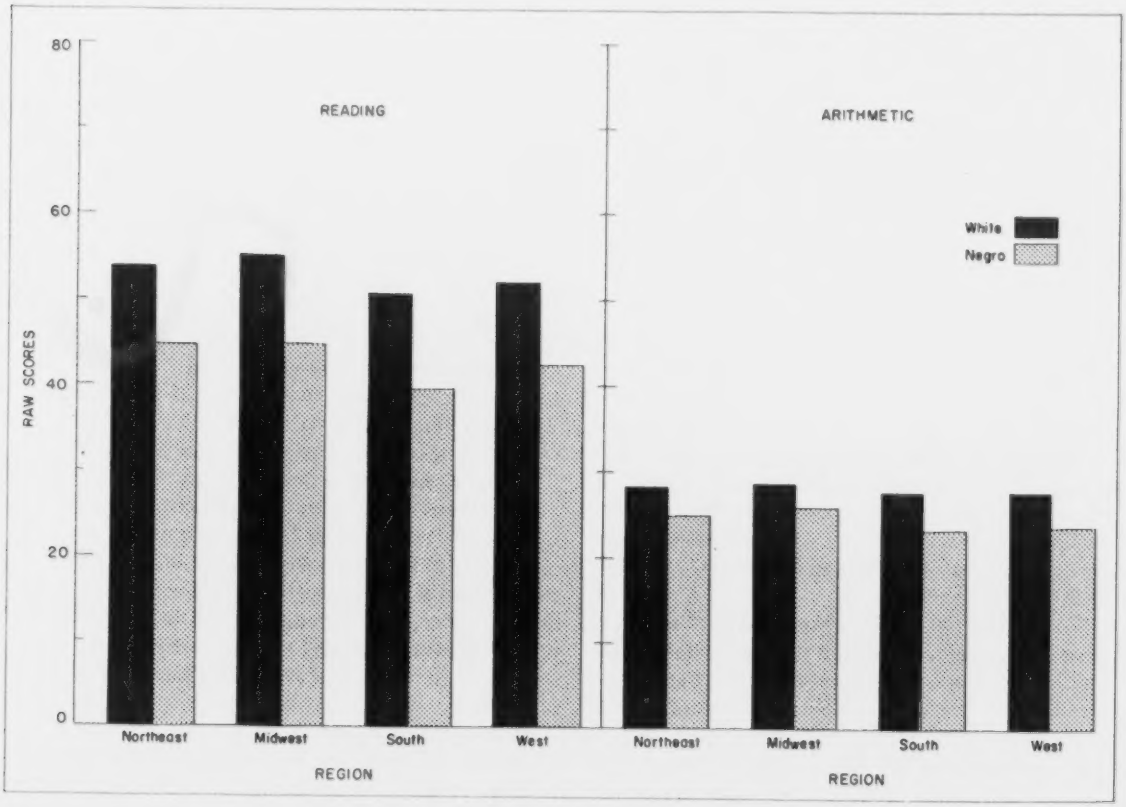

Figure 5. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for white and Negro children by region, United States.

the Arithmetic subtest. However, children from the Midwest rated slightly higher than the others, while children from the South and West rated lowest.

The regional pattern in average raw scores for white boys is similar to that for all white children combined on both subtests. Among girls, the differences were somewhat less marked. Only girls from the Midwest scored significantly higher than those from the South on the Reading part for the group as a whole and at 7 and 9 years of age. Regional differences among white girls in Arithmetic average raw scores were negligible, although here too girls from the Midwest performed somewhat better than girls from the other regions.

School achievement as rated by the two subtests used here shows a regional pattern for Negro children similar to that for children of all races. Negro children in the Midwest score significantly higher on the average than those in the South while those from the Northeast and West fall in between in that order but do not differ significantly from either extreme. This pattern is quite consistent throughout the age range tested; however, in general the differences are not large enough to be statistically significant.

Negro boys in the Northeast Region rated significantly higher on the Reading subtest as a group than those in the South, who rated lowest of all groups. However, at the individual ages the differences were small enough to be attributable to chance alone. Among Negro girls average raw scores on the Arithmetic subtest for those in the Midwest were significantly above those in the South. Other regional differences were in general negligible.

Size of Place of Residence

Children living in urban areas scored slightly higher on the average than those in rural areas on both achievement subtests (figure 6 and tables 11 and 12). This pattern was consistent throughout the age range for both boys and girls with only one exception—for 8-year-old girls the mean raw scores in Arithmetic were identical. However, all of the differences were so small that they could easily be due to sampling variance alone.

Size of urban place of residence was not consistently related to school achievement rating although there was a wide variation in mean scores for children from the various sized communities. Those from urbanized areas of 1-2.9 million showed the highest mean scores on both subtests for boys and girls, while those from the smallest of the urbanized areas—less than 250,000 population—rated lowest for boys and next to the lowest for girls. Among girls, those residing in communities of 25,000 or more which are outside urbanized areas rated lowest in contrast to boys from cities of this size who on the average performed somewhat better. Rural residents rated among the lowest of the groups from urban communities. However, on both subtests, the only mean differences that were statistically significant were those between children from rural areas and those from urbanized communities of 1-2.9 million for both boys and girls.

Children from the large urbanized areas of 1-2.9 million population obtained significantly higher scores on the average throughout the age range than did those from rural areas or from other urban areas which did less well than the rural group. Differences among other groups were too small to be of significance.

On the average, boys consistently rated lower than girls in the Reading subtest regardless of the size of place of residence. On the Arithmetic part, however, boys performed about as well as girls, the pattern of sex differences not being consistent or significant among the various types of communities.

White children in the various urban-rural areas showed a pattern of school achievement similar to that for all races combined on both subtests (table 13). Among Negro children, however, those from rural areas obtained lower mean scores than those from any of the seven classes of urban community on both subtests, although the sample size for these groups was so small that differences of rather substantial magnitude were not statistically significant (table 14).

White children consistently outscored their Negro counterparts regardless of the size of the community in which they lived, with few exceptions (figure 7). Mean raw scores in Reading were significantly higher for white children except

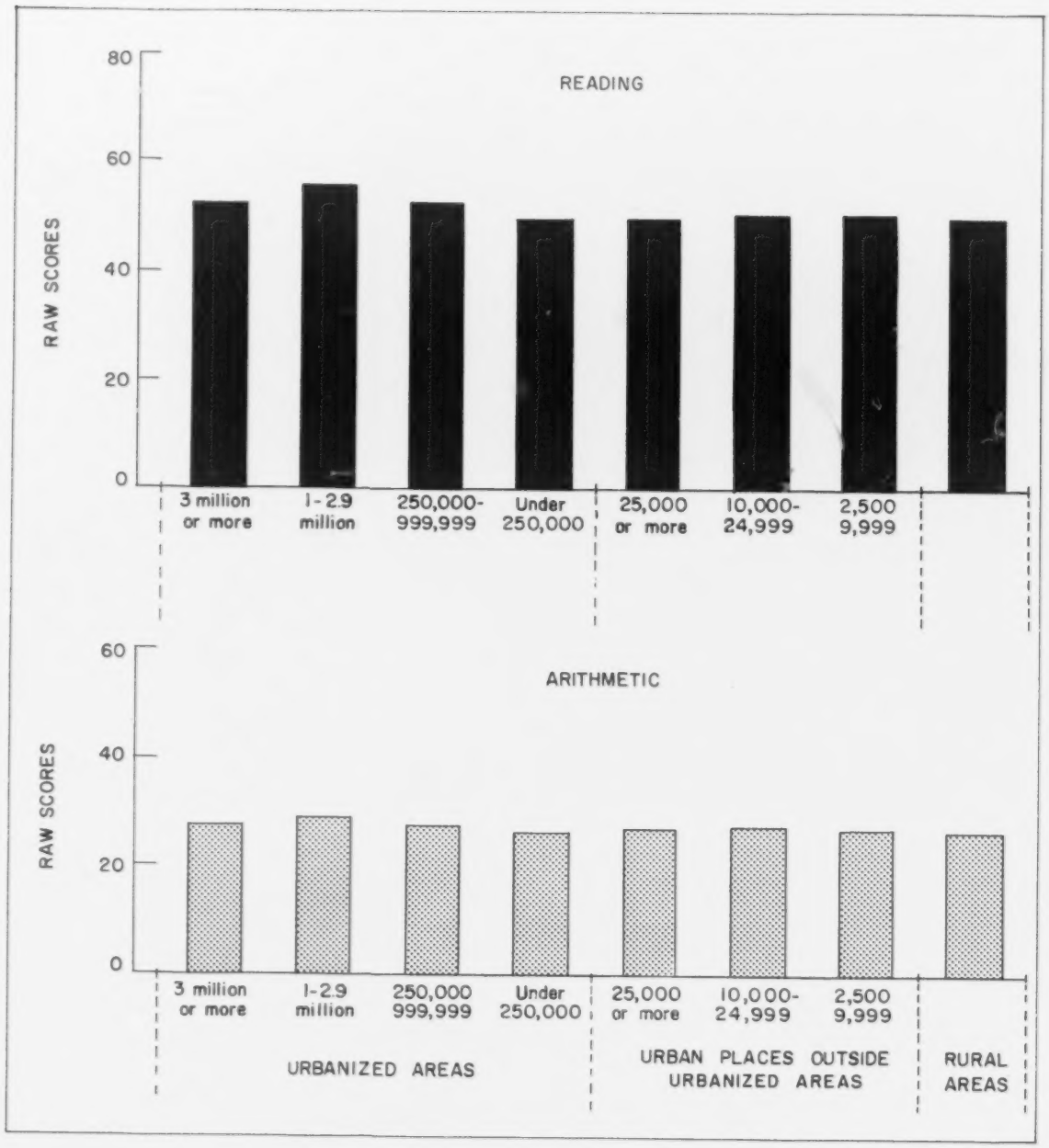

Figure 6. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children by size of place of residence, United States.

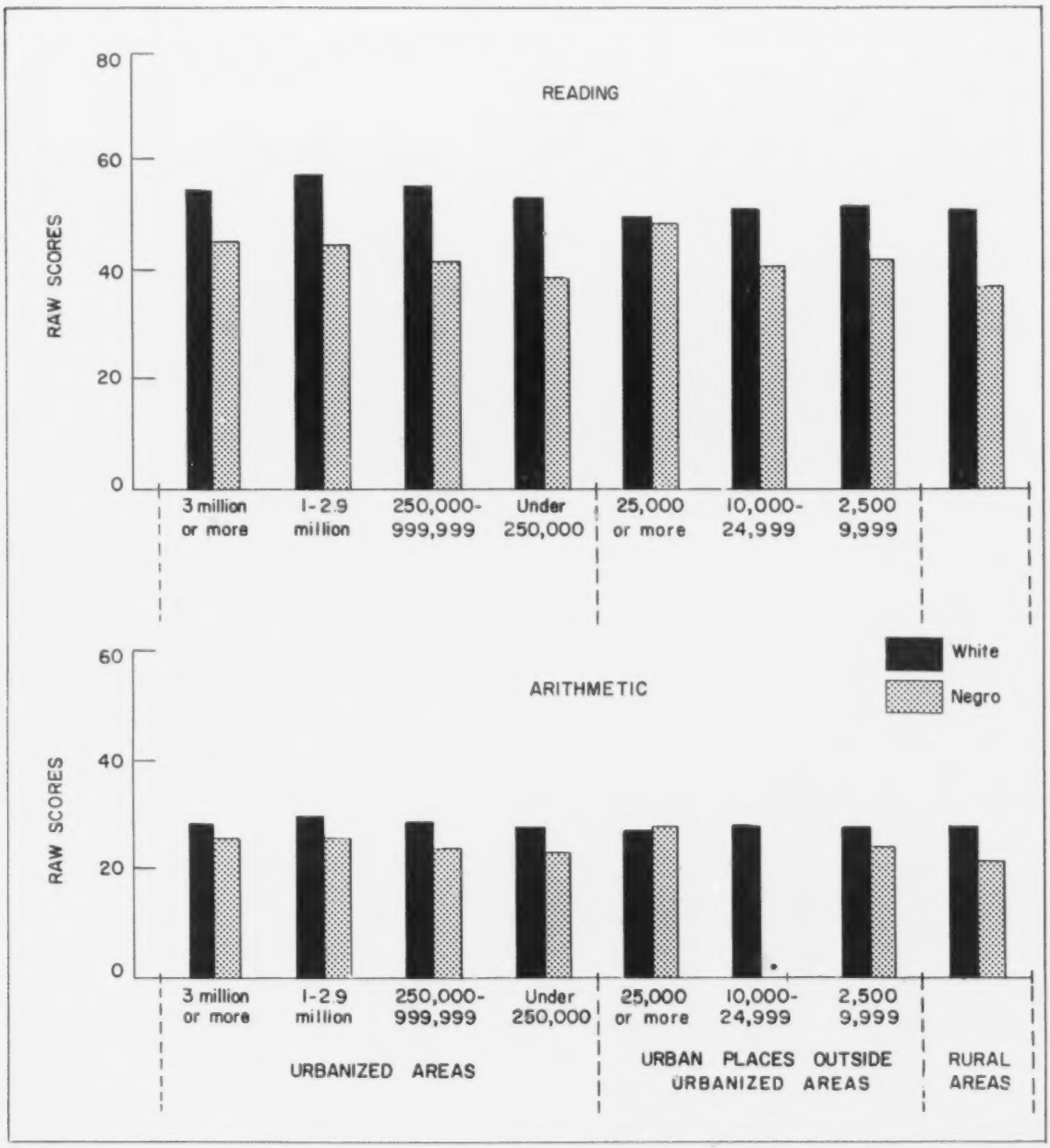

Figure 7. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for white and Negro children by size of place of residence, United States.

those from cities not in urbanized areas; in these the differential existed but was not statistically significant because of the small number in the population and hence in the sample from these areas. On Arithmetic this same pattern was found except that in communities of 25,000 or more the mean raw score for the Negroes very slightly exceeded that for the white children.

A similar pattern of urban-rural differences was found in three of the four regions of the country, children from urban areas as a group rating slightly higher than those from rural areas in all but the Northeast section (tables 15-18).

In terms of standard scores, whether for the two subtests separately or combined, rural children rate (on mean scores) slightly but consistently below average (by 1-3 points) in school achievement, while those from all urban areas combined show average to very slightly above average mean scores throughout the age range (tables 19-21). White children in rural as well as all urban areas combined consistently obtain higher school achievement ratings on the average than do Negro children, with no trend evident by age (table 22).

Population change.—The extent and direction of change in the size of the population within the various areas of residence from 1950 to 1960 may be considered an index to the economic stability of these communities. Places in which there is an above-average gain during the decade are more likely to be ones with a healthy expanding economy, while those experiencing a loss tend to be communities with diminishing employment opportunities and resources for development. It might be expected then that this factor would in turn be reflected to some extent in the school achievement of children residing in these areas.

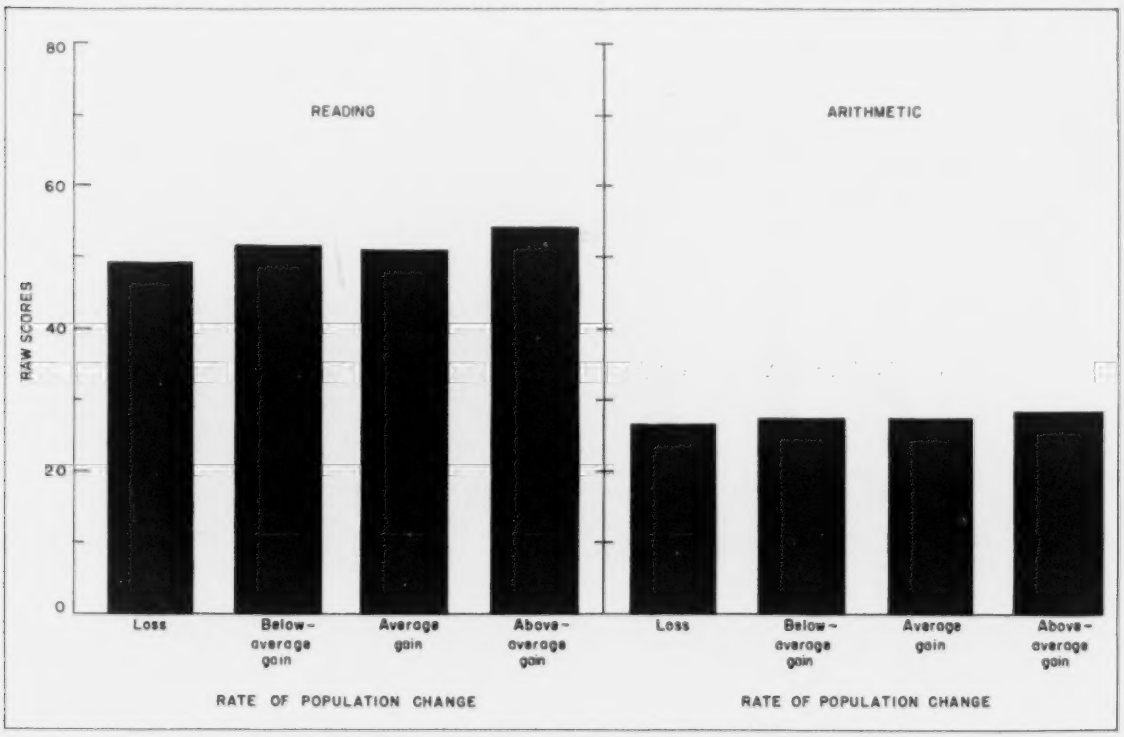

Figure 8. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children by population change from 1950 to 1960 in size of place of residence, United States.

Indeed, as expected, children living in areas where there has been an above-average gain in size show mean raw scores on both school achievement subtests significantly higher than those in areas diminishing in size (figure 8 and table 23). Mean scores for children living in areas of average or below-average gain in population slightly exceed those from areas of loss but, except for the below-average-gain areas on Reading, are significantly lower than those from the more rapidly expanding areas. The pattern of higher mean scores for children in areas of above-average gain when compared with those from areas of population loss may be seen throughout the age range. These differences are statistically significant at all except 8 years on the Reading subtest but only for the youngest and oldest on the Arithmetic subtest.

White children show a progressive increase in mean school achievement ratings on both subtests with gradations in population change from areas of loss to those with above-average gain (table 24). However, only at the extremes of these areas—above-average gain and loss—are the differences statistically significant.

For Negroes the pattern is somewhat different (figure 9). Those from areas of below-average gain in size show slightly higher mean raw scores on the Reading subtest than those from areas of above-average gain, while on the Arithmetic subtest the standing of these areas is reversed. As with white children, Negro children from areas of population loss tend to do less well on the average in both subtests than do those from other areas. Since there are so few Negro children from areas of population loss, the mean differences in scores between children

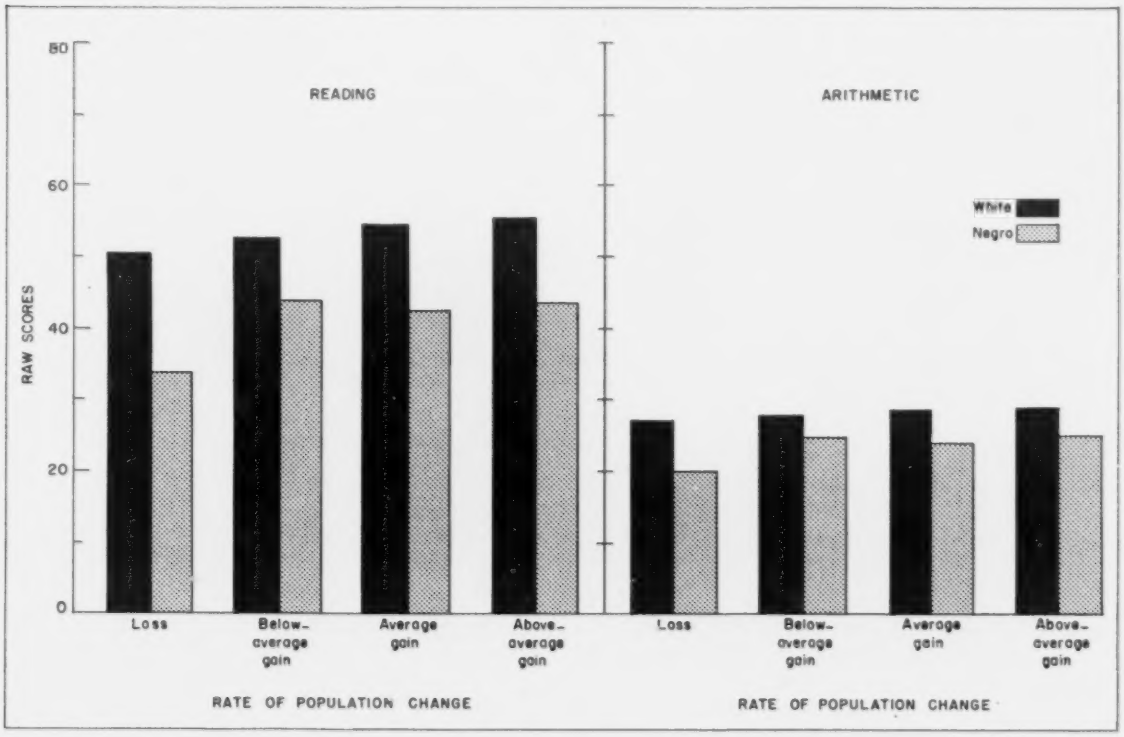

Figure 9. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for white and Negro children by population change from 1950 to 1960 in size of place of residence, United States.

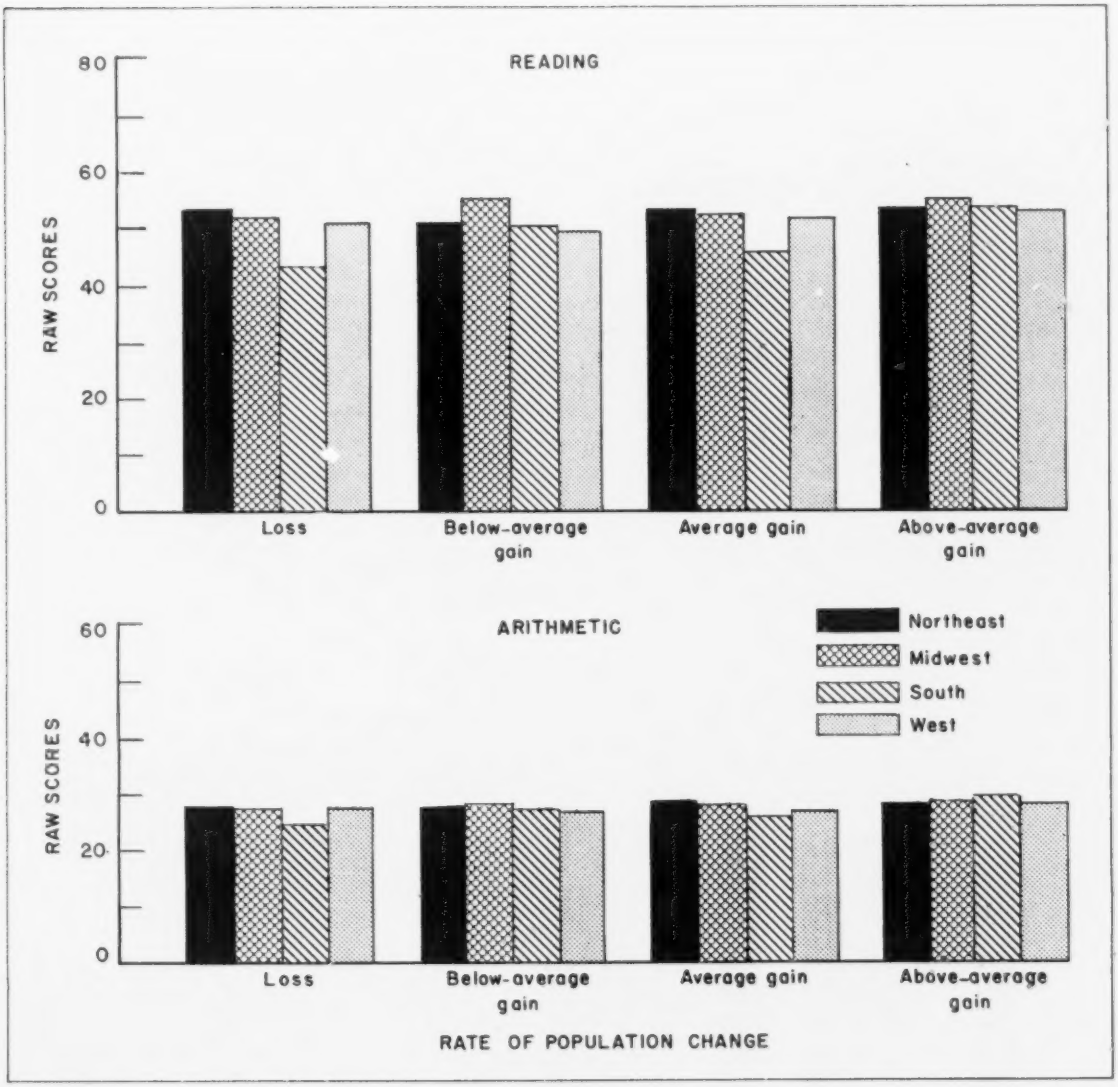

Figure 4. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children by region and population change from 1950 to 1960 in size of place of residence, United States.

from these and other areas, although numerically large in many instances, are not statistically significant at the 5-percent level.

By region the pattern of ratings on the school achievement subtests is less consistent, and mean differences in scores among the four population-change classes are generally too small to be of statistical significance (figure 10 and table 25). In Reading, children from areas of above-average gain show slightly higher mean raw scores for all regions except the Midwest, while the lowest mean scores were obtained in Northeast and West from areas of below-average gain and in the other two regions from areas of

population loss. On Arithmetic, mean scores for children from areas of above-average population gain were highest in all regions but the Northeast, while scores averaged lowest in areas of population loss again only in the Midwest and South.

Children living in areas where there was a population loss show mean standard scores below average in school achievement on each subtest and the combined rating consistently throughout the age range, while those from areas with above-average gain in population size show average to slightly above-average mean standard scores (table 26). These differences again are not large enough to be statistically significant.

Here too the white-Negro score differential is maintained throughout the age range in each population change group (table 27).

Family Income

School achievement ratings, as would be expected because of their theoretical dependence on ability and opportunity, increased consistently with the size of family income from children in families with annual earnings of less than $3,000 per year to those in families earning $15,000 or more a year (figure 11 and tables 28 and 29). On both Reading and Arithmetic subtests the successive differences in mean raw scores from one income level to the next higher were statistically significant up to those in families earning $10,000-$14,999. With few exceptions this pattern of relationship to income level was found throughout the age range.

Among white children, as for all races combined, school achievement on the average in-

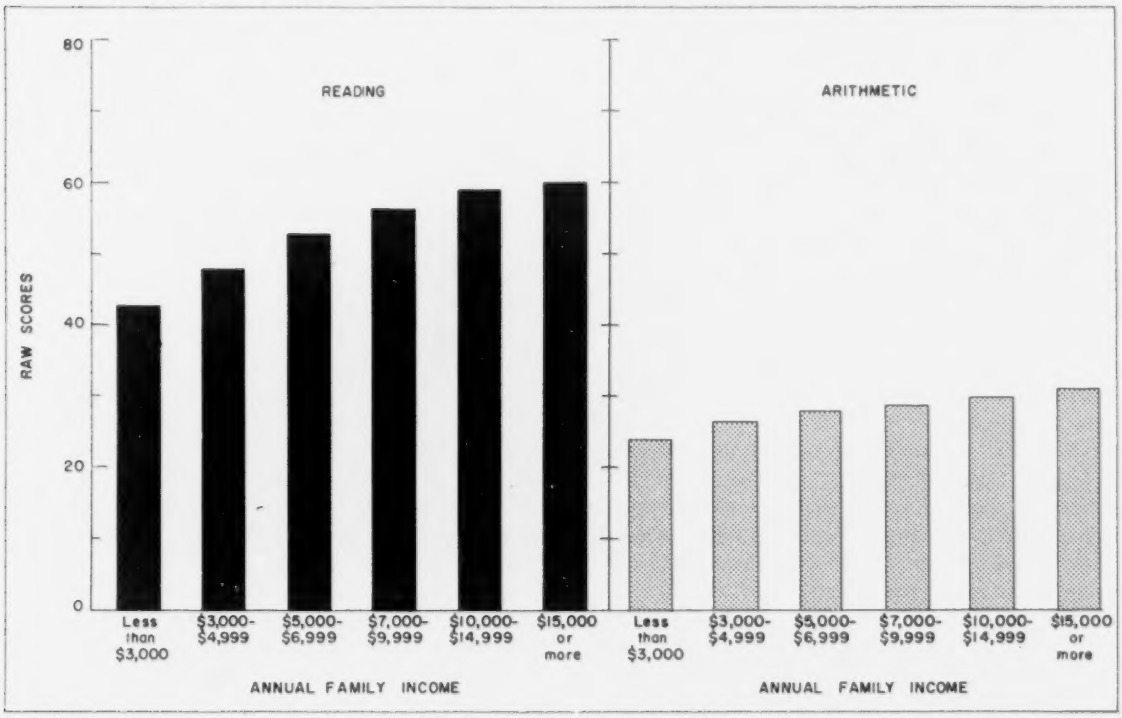

Figure 11. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children by annual family income, United States.

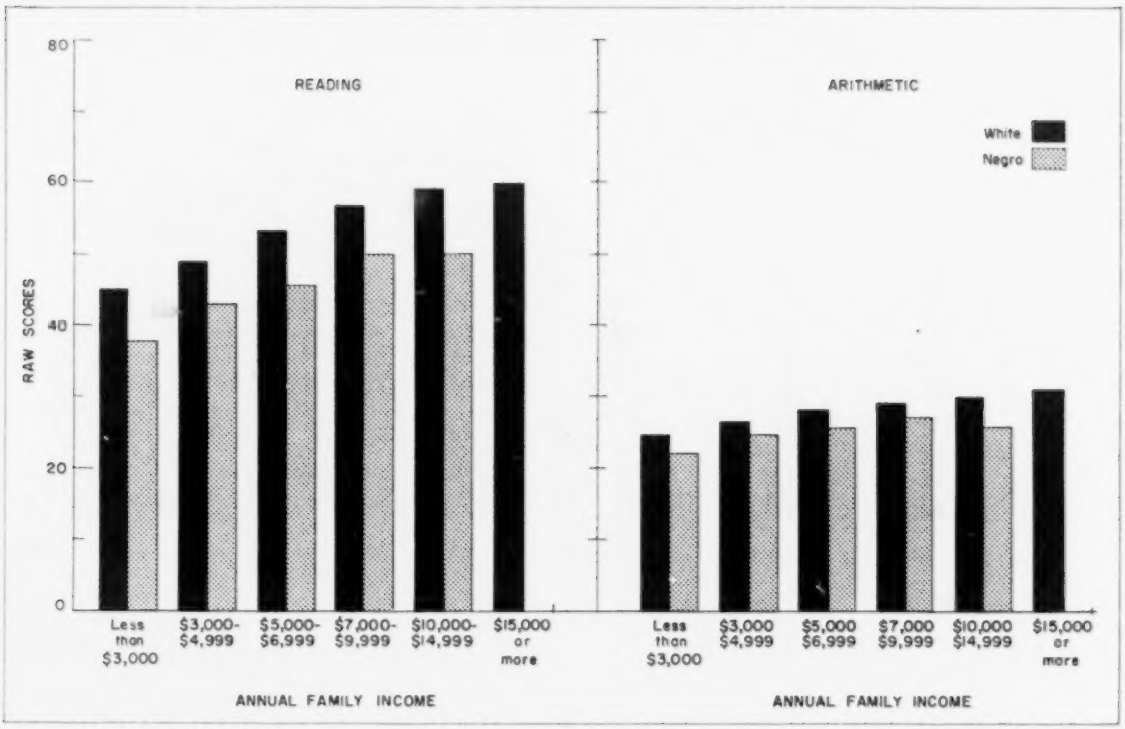

Figure 12. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for white and Negro children by annual family income, United States.

creased consistently with size of family income (table 30). Here the successive mean differences from one income class to the next highest are statistically significant to $10,000-$14,999 for Reading raw scores but only to $5,000-$6,999 for Arithmetic raw scores. The pattern of increase in mean school achievement with size of annual family income is generally reflected throughout the age range with few exceptions--only to $10,000 for 8- and 10-year-olds on Reading and only to $7,000 for 7-year-olds and to $5,000 for 9-year-olds on the Arithmetic.

Negro children show a somewhat similar pattern of relationship of school achievement to family income (figure 12). In mean Reading raw scores an increase may be seen progressively to those in families earning $10,000-$14,999, while on the Arithmetic subtest the mean increases in scores extend only to those with incomes of $7,000-$9,999. Because of the smallness of this racial group successive differences are large enough to be statistically significant only between the two lowest income groups.

Similar patterns of increase in school achievement with income size were found in each of the four regions with few exceptions (figure 13 and table 31). In the Northeast there was a steady increase in the mean raw score on each subtest from children in families with the lowest family income to those with the highest. In the Midwest the trend was similar except for the Reading subtest, where the increase stopped at $10,000-$14,999. Southern children showed consistent increases in scores but only to those in families with earnings of $10,000-$14,999 while in the West the mean score increases continued to children in families of $10,000-$14,999 on Reading and $15,000 or more on Arithmetic. With one or two exceptions in each of the regions this pattern was found throughout the age range of children tested.

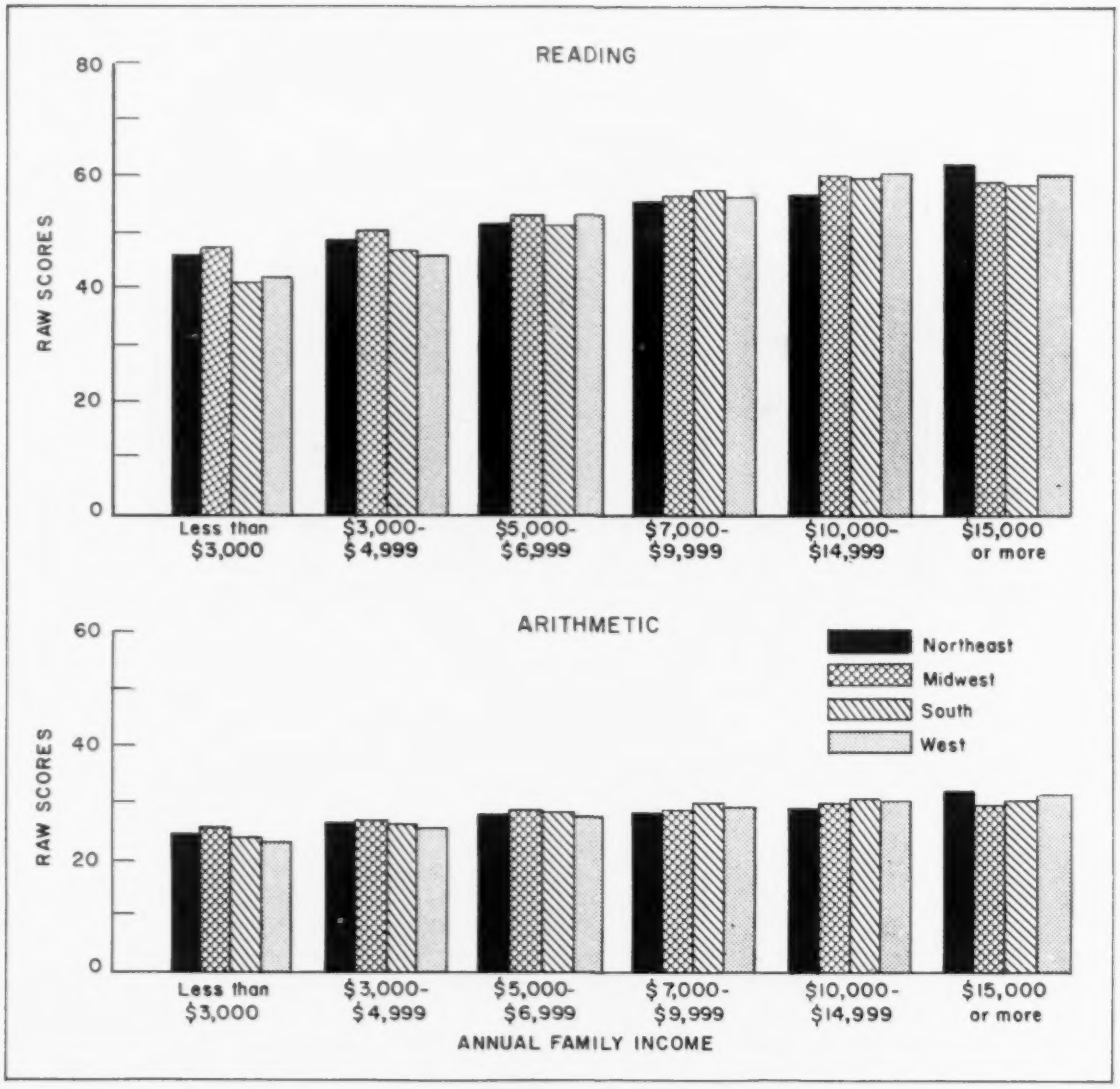

Figure 13. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children by region and annual family income, United States.

In terms of standard scores, a consistent increase in mean score with income was found at each year of age on each subtest as well as the combined rating for school achievement, with minor exceptions only at 7, 8, and 10 years, where mean Reading scores in the highest income level dropped slightly (tables 32-33). Within each income level no consistent significant trend by age is observable, the mean standard scores by age within each being in fairly close agreement. While the differences in mean score from one income level to the next are not statistically significant throughout, those between the highest and lowest income level are significant without exception. The pattern of association with income is consistent for white but not Negro children (table 34).

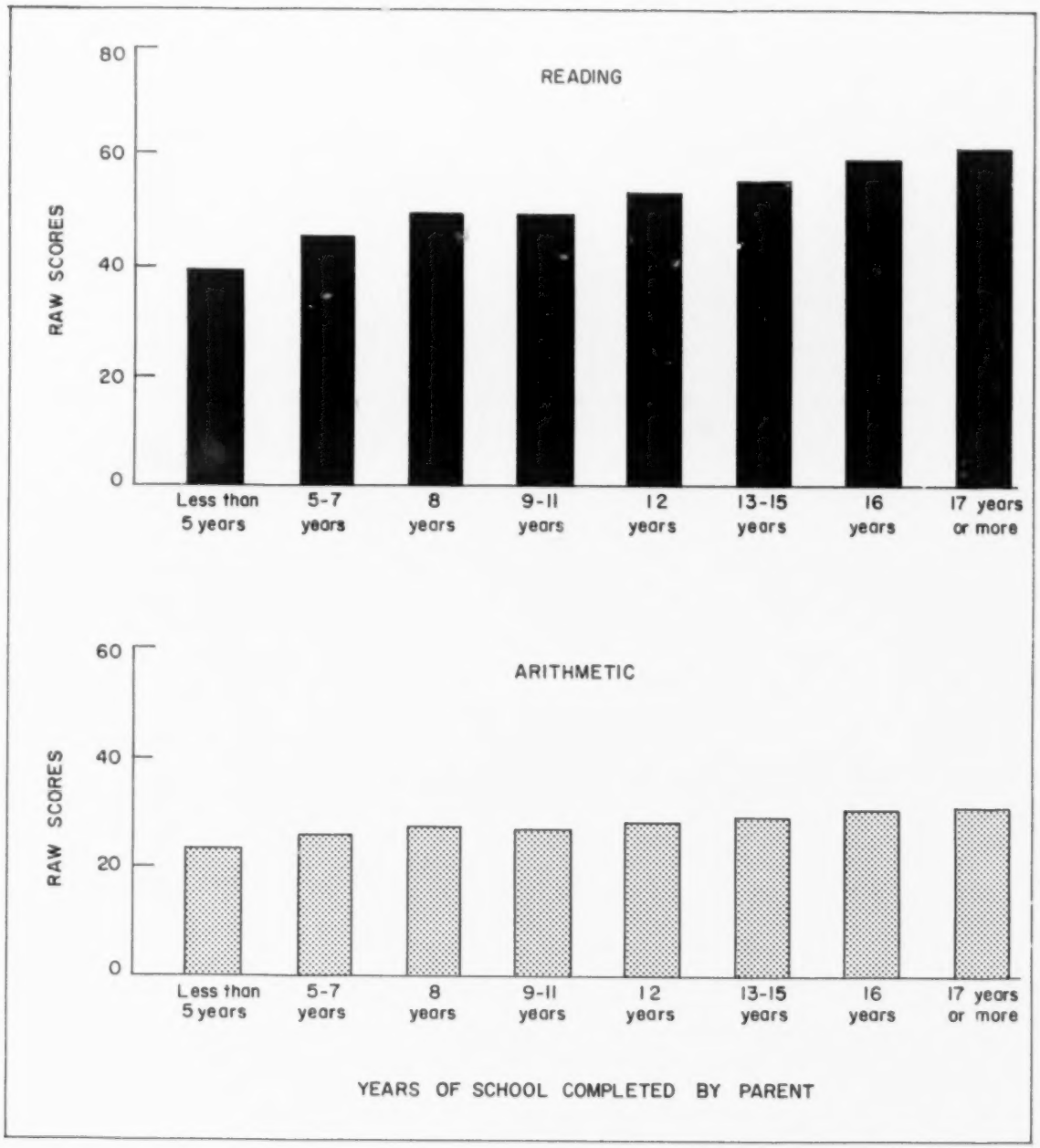

Figure 14. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children by education of parent, United States.

The degree of association between school achievement (standard scores) of children as rated here and the income of their families (correlation of 0.38±.025) is even stronger than that with race (-0.29) and is diminished only slightly when the effect of race and region are removed (0.31).

Education of Parent

School achievement scores on both Reading and Arithmetic subtests increased steadily with the number of years of schooling completed by the parent who was considered the head of the household with one exception—on both subtests there was a very slight and insignificant dip in mean raw scores for children in families where the parent had completed between 9 and 11 years of regular education (figure 14 and tables 35 and 36). The increases in mean score for children between successive educational levels was statistically significant except between those whose parents had completed eighth grade when compared with those completing 9-11 years and between the two highest educational levels—16 years and 17 years or more.

This general pattern of increase in mean scores in school achievement with level of education of the parent was found throughout the age range tested with few minor exceptions. The differences were not consistently significant, however, because of the smallness of the groups within some of the educational classes.

Among white children the trend was similar to that for all races combined on the Reading subtest, while on the Arithmetic subtest mean scores showed differences in a similar direction but the successive differences were statistically insignificant between 5-7 and 8 years, between 12 and 13-15 years, and between the two highest educational levels (table 37).

With Negro children a somewhat similar pattern emerges (figure 15); however, the dip in mean scores was found at 8 years of education for the parent on both subtests (table 38). The group was too small to show the consistent trend of significant differences with increasing educational level found among white children.

If educational level of parent is grouped into four classes—no formal education in regular schools, elementary education only (completing 1-8 years), high school education (completing 9-12 years), and college or beyond (completing 13 or more years)—a more distinct and consistent pattern of the association of educational level of parent with mean school achievement of the child may be seen. Here without exception there is a consistent increase in mean score for the child with educational level of the parent throughout the age range tested (table 39).

A similar pattern of association between educational level of the parent and mean school achievement raw score for the child was found in each of the four geographic regions into which the country was divided for the purposes of this survey (figure 16 and table 40). In thr of the regions—the Northeast, the Midwest, and the West—the number of parents with no formal education was so small that estimates for that group are less reliable than the rest. Significant increases in mean school achievement scores in Reading may be found between successive educational levels of the parent from those with elementary education on in the Northeast, Midwest, and West and from no education on for children in the South. On the Arithmetic subtest the mean differences in raw scores are statistically significant only from the high school group on in the Northeast and Midwest and from those with elementary schooling on in the South and West.

School achievement of children in terms of mean standard scores generally increases consistently with the educational level of the parent who is head of the household, whether achievement is measured by either of the two subtests or a combination of the two (tables 41-44). Only among those with some college education will a few minor exceptions be noted. Again differences between mean scores obtained by children in the lowest and highest family educational groups are statistically significant throughout the age range. Those whose parent had completed less than 5 years of formal schooling rated consistently below average, from 8 to 16 points, while those whose parents had 17 years or more of formal education rated 7 to 11 points above average. No consistent trend by age within educational group is observable.

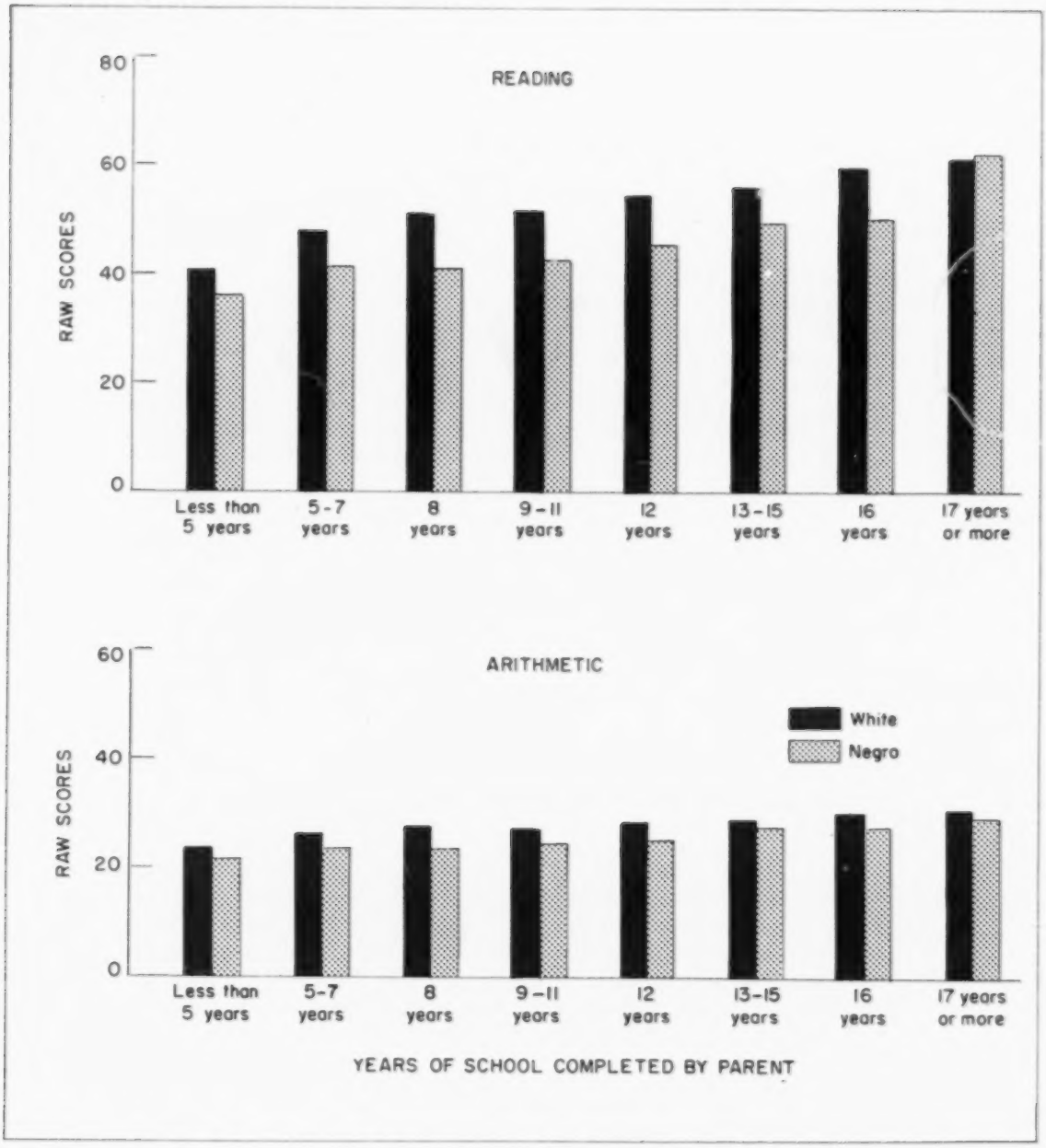

Figure 15. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for white and Negro children by education of parent, United States.

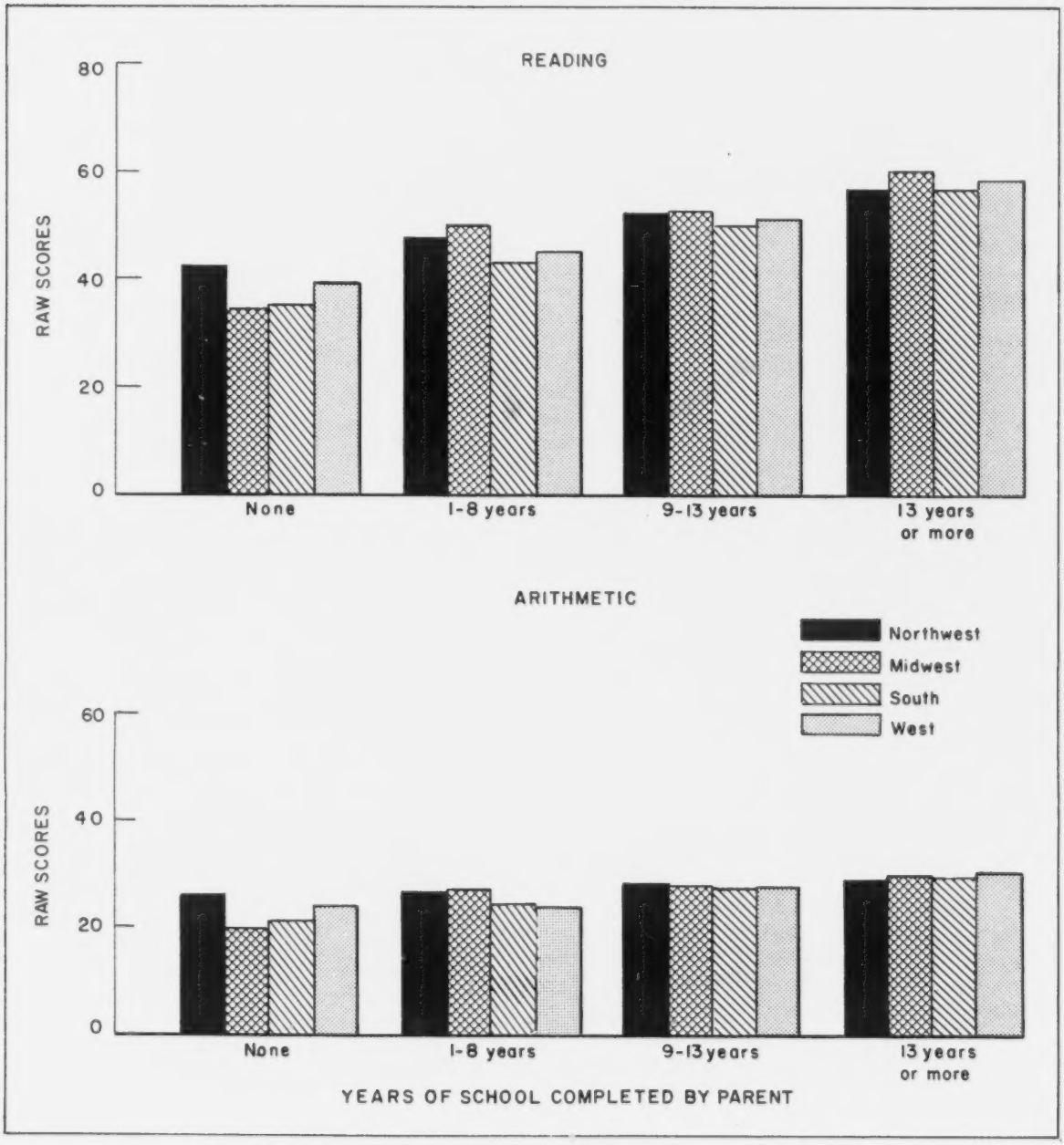

Figure 16. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children by region and education of parent, United States.

An even stronger association exists between the school achievement of children and the education of their parents (0.42 ± .020) than that found with family income (0.38). Removing the influence of race and region reduces the degree of relationship of these test ratings with education of parent only slightly to 0.37. A strong correlation is found to persist with parent's education even when the effect of income is removed (0.27), despite the fact that income and educational attainment are themselves highly correlated (0.58).

Grade in School

As shown in a previous report,[9] there was a significant increase in mean school achievement scores with grade in school for the children from kindergarten through the seventh grade on the Reading subtest and from kindergarten through sixth grade on the Arithmetic subtest (tables 45 and 46). Since the age range under study in this survey was 6-11 years, children from kindergarten and seventh grade at the time of examination are relatively smaller groups than those in the intervening grades and could not be considered completely typical of either the total or normal group of children in those two grades. Test findings should be closely representative, however, of those in grades 1-6.

Both white and Negro children show an increase in mean scores with grade level that is statistically significant from one grade to the next up to the sixth grade on both school achievement subtests (figure 17 and tables 47 and 48).

White children consistently score significantly higher than Negro children on the average at each grade level from kindergarten through seventh grade on both school achievement subtests. However, among the group in special ungraded classes which include the physically and mentally handicapped, Negro children on the average score somewhat higher in both subtests. The differences, however, are not large enough to be statistically significant with the small enrollment in these classes.

In each of the four regions an increase in school achievement as rated by both the Reading and Arithmetic subtests may be seen from kindergarten through seventh grade (figure 18 and tables 49-52). The mean differences in scores from one grade to the next are consistently statistically significant from grades 1 through 6 in each area and in some instances over more of the grade span.

Mean school achievement raw scores were generally lower on both subtests for children in the South and higher in the West than in the other two regions. However, the differences in mean scores found among the regions were not large enough to be statistically significant with a sample of the size and design of that used in this survey. Exceptions to this pattern in the South were found in Reading among those in kindergarten who rated higher than those from other regions and among first graders who slightly outperformed those from the Northeast. In Arithmetic exceptions to the lowest ratings for Southern children were found only among those in kindergarten and grade 6. On the Reading subtest, those from the Northeast in the sixth grade rated slightly higher on the average than those in this grade from the West. Southern children in kindergarten obtained higher scores on the average in Reading than those in the same grade in other regions, while on both subtests Southern children in special ungraded classes outperformed those from other parts of the country.

Standard score averages generally show a small but consistent increase with grade from first through sixth possibly reflecting the fact that at least some of the children of a given age with greater skill in these subjects than their peers tend to be advanced and those with lesser skill held back in grade (tables 53-55). Practically without exception the youngest child in each grade (those younger than the modal age in each instance) shows the highest standard scores as would be expected since the more skilled or brighter children of any particular age are the ones who tend to be accelerated.

DISCUSSION

The foregoing findings show distinct regional, racial, area, and economically related differentials in the school achievement of children 6-11 years of age in the United States, both with respect to reading and arithmetic skills.

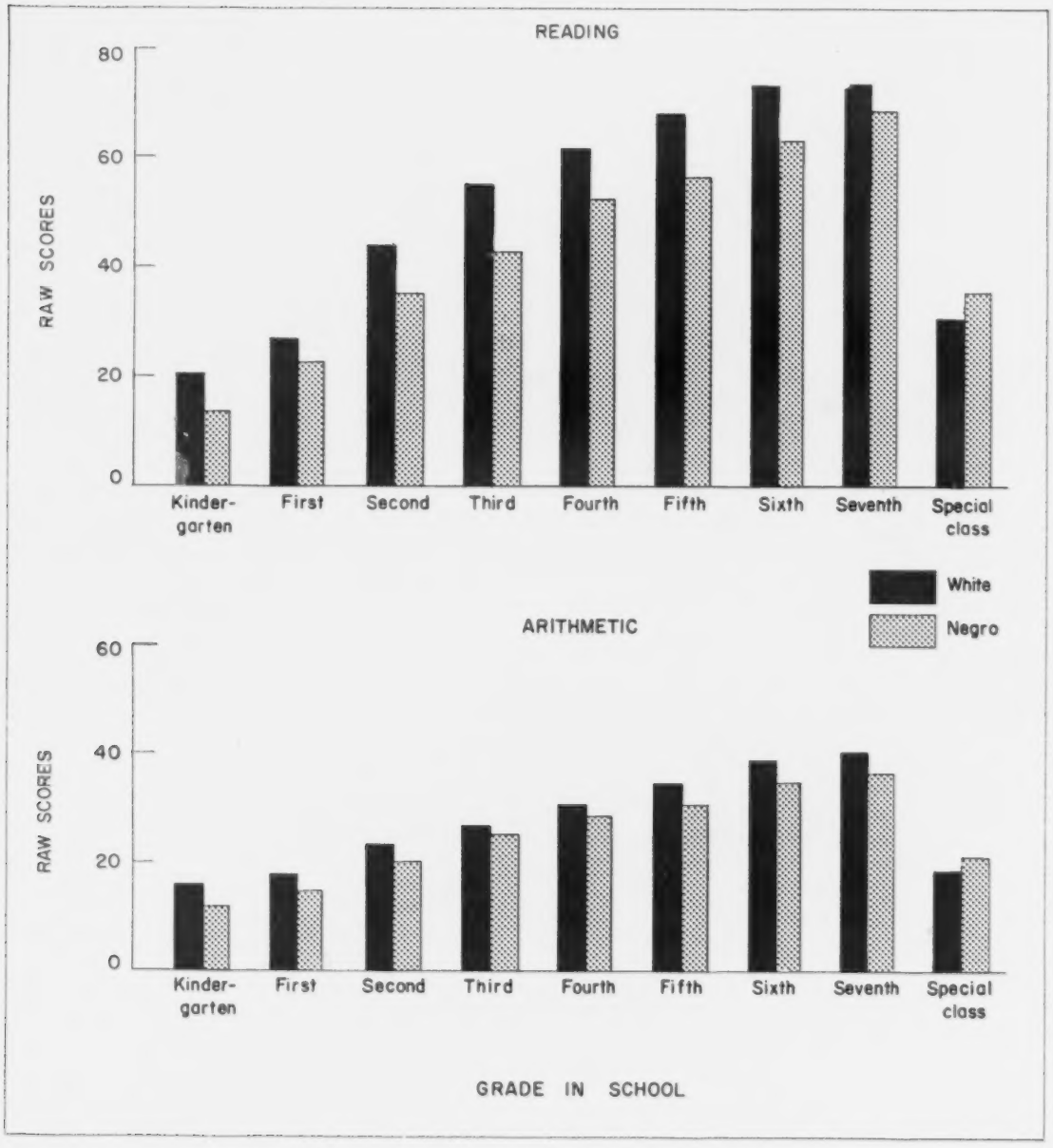

Figure 17. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for white and Negro children by grade in school, United States.

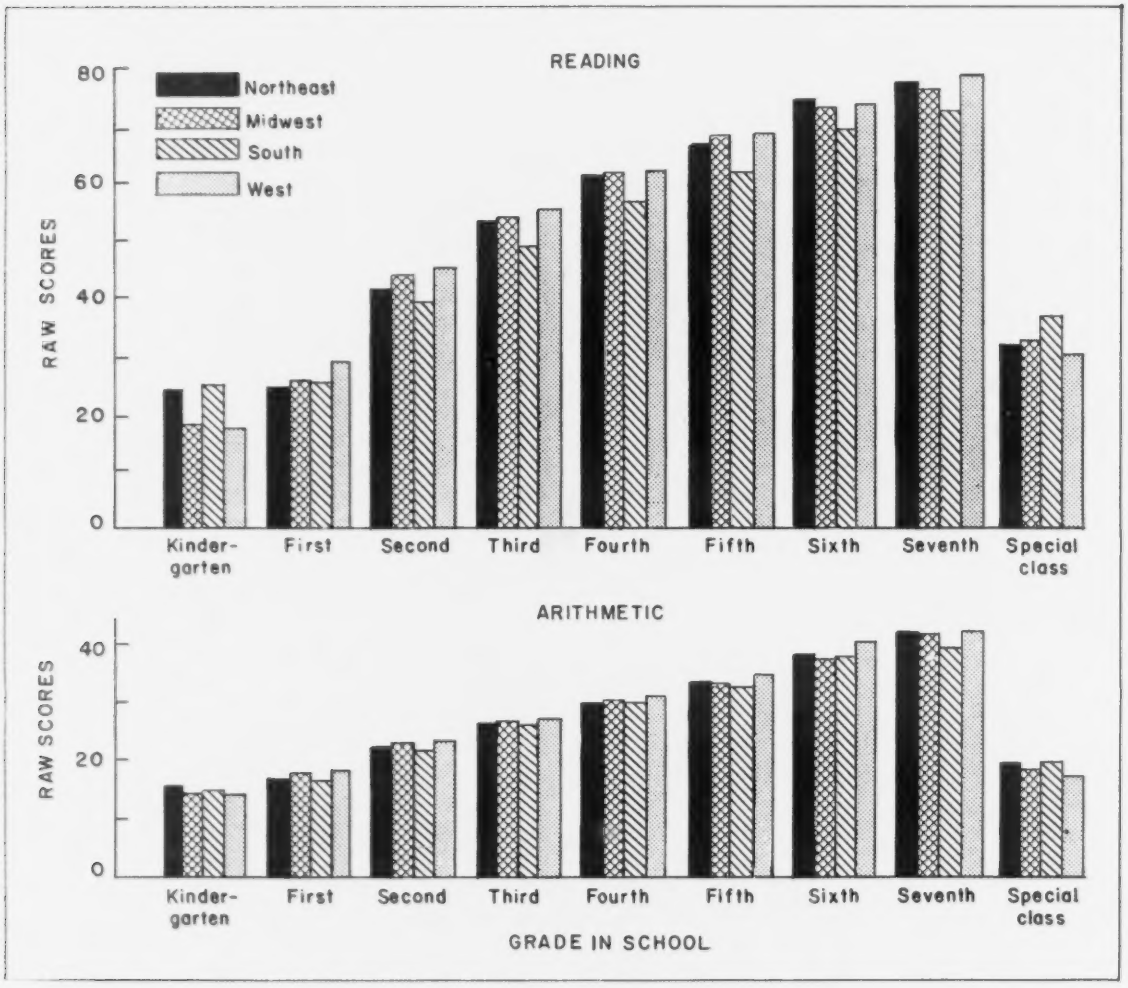

Figure 18. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children by grade in school and region, United States.

Marked regional differences are apparent here even with the gross geographic grouping that was possible with the size and design of the sample used in this study. Children from the Midwest and Northeast rated substantially higher than those from the South on both subtests—the equivalent of roughly one-half a standard deviation in Reading and one-third a standard deviation in Arithmetic on the average. Those from the West also rated higher than those from the South, though here the discrepancy was less marked. This pattern of regional differences was found throughout the age range in the study from age 7 on. On the Reading subtest the differences may be seen to increase with age until 9 years. No regional differences in achievement were evident at age 6 in either skill.

In assessing the implication of these findings, it should be kept in mind that the information on school achievement obtained on the representative sample of the United States children from this widely used test—the WRAT—is cross-

sectional, at a single point in time during the period from 1963-65. Each age group represents a different cohort of children. Thus any apparent age trends will reflect both the actual development expected in these skills with age and any differences among the groups themselves in ability or environmental influences. For example, the increase in average scores with age could be depressed somewhat because the 11-year-old group was exposed to an environment less conducive to the development of such skills at age 6 than the group of 6-year-olds in this study. Or, on the other hand, the trend may be exaggerated because the 11-year-olds may have been in a more favorable environment at age 6 than the 6-year-olds in the study. It thus expresses the level of proficiency in these two skills at the time of the study insofar as it can be measured by this test.

Racial differences in school achievement are also clearly evident here. White children rated significantly higher in both reading and arithmetic skills than did their Negro counterparts throughout the age range in the study. As indicated previously, the estimates for the other races are not sufficiently reliable to be considered here both because of the smallness of the group and the diversity of races represented within it.

A similar pattern of white-Negro differences in achievement is found within each of the four regions of this country. White children in the South were found to rate below their counterparts from other regions except at age 6, while the Negro group in the South fell below Negro children in other parts of the country consistently throughout the age range. Thus the generally poorer performance of Southern children is attributable primarily but not entirely to this racial differential in achievement since the proportion of Negro children in the South is about twice as high as in the remainder of the country.

Since these findings are based on a single abbreviated test of school achievement, it is of interest to determine how they compare with those from other studies. The only other recent large-scale published study in which similar data have been obtained is that done by Coleman[11] in cooperation with the U.S. Office of Education in 1965. While the test instruments and sample frame for the two studies differed, it is possible to make a rough comparison of ratings in terms of standard score equivalents for white and Negro children at grades 3 and 6 on Reading and Arithmetic. The Coleman study findings in the text table have been converted to standard scores, based on his total sample in each of the two grades on each subject, with mean set at 100 and standard deviation at 15, so that the units

Table A. Average standard score equivalents in Reading and Arithmetic for third- and sixth-grade pupils in the Coleman study and for the United States in the present study, by race

Subject and grade	White		Negro	
	United States 1963-65	Coleman 1965	United States 1963-65	Coleman 1965
Reading	Standard score			
Third grade	103	104	89	91
Sixth grade	103	106	93	91
Arithmetic				
Third grade	103	104	96	92
Sixth grade	104	104	93	89

would be roughly comparable to standard score units from the present study. The white children are seen to rate significantly higher than Negro children in each skill and grade in both studies. The ratings from the two studies are remarkably similar, except among Negro children on arithmetic, where mean standard scores from the Coleman study were significantly lower than in the present study at both grade levels. Further comparisons with the Coleman data are not possible at this time because of differences in test content as well as the regional and other classifications used in the two studies.

The dramatic findings with respect to racial and regional differentials at the time of this study tend to overshadow other far more significant socioeconomic trends related to school achievement which merit attention. The present study clearly shows that proficiency in the two skills—reading and arithmetic—was most strongly associated with educational level of the children's parents and nearly as closely with their family income. These relationships are both substantially greater than that found with race. If the racial and regional influences are removed, the degree of association of school achievement here with these two socioeconomic factors is reduced only slightly. A significant relationship between these skills and education of parent exists even when the effect of income level of the family is removed, although the degree of association is reduced by nearly one-half.

If the effect of differences in educational attainment and income is removed, however, a significant white-Negro differential in school achievement still persists but the degree of association is reduced by nearly one-third (from -.29 to -.18). The relationship of school achievement to socioeconomic status of parents is maintained over all regional and racial subgroups.

The association of these skills with other economically related factors is less marked. Children in large urban communities tend to be somewhat more proficient in these skills than those from rural areas, and those from the more economically prosperous communities (as indirectly measured by population loss or gain) rate higher than children from areas showing a population loss.

The pattern of the relationship of school achievement to these demographic and socioeconomic variables is not completely consistent throughout the age range in the study primarily because the sample size was not large enough to produce reliable estimates for such small subgroups.

Although the major emphasis in this report has been directed toward analyzing children's school achievement in relation to their age level, some attention has also been given to reporting average performance by grade levels represented over this age range. The data by grade level show a close correspondence to the same data reported by chronological age. The only noteworthy additional finding here is that when data are examined for ungraded special education classes, Negro children seem to do better than their white counterparts. Whether or not this finding may be a function of a greater tendency to assign Negro children to such classes is not readily apparent from the data available in this study.

SUMMARY

This report presents estimates of the level of achievement in reading and arithmetic skills among noninstitutionalized children 6-11 years of age in the United States within the various demographic and socioeconomic subgroups. The findings are based on scores obtained on the Reading and Arithmetic subtests of the Wide Range Achievement Test administered to examinees in the Health Examination Survey of 1963-1965. In the survey, a probability sample of 7,417 children were selected to represent the 24 million noninstitutionalized children of this age in the United States. The total of 7,119, or 96 percent of the sample examined, were found to be closely representative of American children of this age with respect to age, sex, race, region, and other available demographic and socioeconomic variables.

Findings are presented in the form of raw scores, standardized equivalents of raw scores within each age group, and grade level equivalents of raw scores as previously described.[9] Significant differentials in school achievement were found over all variables considered here.

School achievement ratings were highest on the average among children in the Midwest and lowest in the South.

White children consistently surpassed their Negro counterparts on the average in these skills. In terms of grade level equivalents these differences increased on the Reading subtest from a negligible amount at age 6 to 2.1 grade levels at age 11 and on the Arithmetic subtest from 0.7 at 6 years to 1.3 at 11 years. A similar pattern of racial differences was generally found in all four regions of the country.

Children from large urbanized areas obtained markedly higher scores on the average throughout the age range than did those from rural areas.

Children in areas showing an above-average increase in population size between 1950 and 1960 rated higher than those in areas of decreasing size.

School achievement ratings of children were found to have a stronger association with the socioeconomic status of the family as measured either by family income or educational level of parent than with race although the white-Negro differential was maintained with few exceptions over all other demographic and socioeconomic variables considered here.

Comparison was made with findings from the 1965 Coleman-U.S. Office of Education Study of Equality of Educational Opportunity.[11] Although the test instruments, sample frame, and methods used in the two studies differed, the findings in terms of standard score equivalents for white and Negro children were remarkably similar.

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Table 1. Number of children aged 6-11 years by region, race, urban-rural residence, annual family income, and education of parent: United States, 1963-65

Characteristic	Total children 6-11 years	Region				Race	
		Northeast	Midwest	South	West	White	Negro
	Number of children in thousands						
Total	23,784	5,357	6,763	5,750	5,912	...	...
Race							
White	20,403	4,716	6,112	4,153	5,420	...	...
Negro	3,271	626	619	1,597	428	...	...
Other races	110	15	32	0	64	...	...
Residence							
Urban area	15,554	4,075	4,578	2,876	4,025	12,873	2,625
Rural area	8,230	1,282	2,185	2,874	1,887	7,530	646
Income							
Less than $3,000	4,353	406	680	2,350	915	2,894	1,448
$3,000-$4,999	4,248	801	1,135	1,129	1,183	3,347	898
$5,000-$6,999	5,297	1,470	1,662	904	1,260	4,765	480
$7,000-$9,999	4,816	1,297	1,688	633	1,197	4,556	250
$10,000-$14,999	2,782	731	1,025	327	698	2,744	29
$15,000 or more	1,086	315	326	200	243	1,075	-
Unknown	1,198	335	244	204	413	1,020	164
Education of parent							
Less than 5 years	1,673	134	77	955	506	1,209	463
5-7 years	2,225	374	310	1,165	375	1,439	778
8 years	2,597	466	984	565	582	2,281	316
9-11 years	4,671	1,234	1,481	967	988	3,810	823
12 years	7,295	1,745	2,538	1,087	1,925	6,643	626
13-15 years	1,867	451	570	282	562	1,781	86
16 years	1,823	475	459	311	576	1,769	42
17 years or more	1,306	425	278	286	316	1,268	26
Unknown	321	50	63	128	78	198	108

Table 2. Averages and standard deviations (SD) of Reading and Arithmetic raw scores on the Wide Range Achievement Test for children, by region, age, and sex: United States, 1963-65

Age and sex	Northeast		Midwest		South		West	
	Average	SD	Average	SD	Average	SD	Average	SD
Both sexes	Reading raw score							
6-11 years	52.9	12.58	54.0	12.32	47.6	12.49	51.4	13.05
6 years	26.3	11.41	25.4	12.02	25.7	10.62	25.4	11.09
7 years	43.4	14.40	43.5	11.47	37.5	13.37	41.1	10.74
8 years	54.6	12.58	54.1	13.37	47.7	14.30	52.3	11.86
9 years	61.0	12.50	61.4	13.89	52.5	16.18	59.6	14.14
10 years	66.8	12.73	66.9	12.20	59.0	14.32	64.4	14.32
11 years	71.5	11.61	71.2	12.68	65.1	14.96	70.0	14.49
Boys								
6-11 years	52.4	13.14	52.3	12.66	45.4	12.71	50.3	13.18
6 years	25.1	10.23	24.0	11.87	25.7	12.26	24.8	12.18
7 years	42.6	14.84	40.9	11.85	35.9	13.09	40.0	13.16
8 years	52.9	13.51	52.0	14.52	43.9	12.29	51.4	12.65
9 years	60.6	12.99	59.1	13.48	51.0	18.47	57.7	14.14
10 years	66.6	14.24	65.7	10.99	58.0	17.27	62.3	15.76
11 years	69.8	14.63	69.4	13.01	63.7	15.90	68.0	15.30
Girls								
6-11 years	53.5	12.41	55.7	11.72	49.7	11.51	52.6	13.26
6 years	27.5	10.23	26.8	11.94	25.7	9.14	25.9	11.71
7 years	44.0	13.23	45.8	11.26	38.9	15.35	42.4	9.65
8 years	55.8	11.21	56.3	10.50	51.7	11.65	53.1	11.65
9 years	61.4	12.01	63.4	12.01	54.0	12.75	61.4	12.01
10 years	66.9	11.13	68.1	13.26	59.8	13.94	66.3	14.77
11 years	73.0	10.20	72.9	12.21	66.1	15.36	72.2	12.21
Both sexes	Arithmetic raw score							
6-11 years	27.7	4.88	28.0	4.93	26.2	5.34	27.1	5.34
6 years	17.4	4.50	17.2	3.99	16.3	5.31	16.6	4.65
7 years	22.9	3.81	22.7	3.91	20.6	6.16	22.0	4.30
8 years	27.1	3.83	26.5	4.38	25.1	4.65	25.8	3.83
9 years	30.2	4.47	29.9	4.25	28.2	5.12	29.5	4.69
10 years	33.5	5.66	33.4	5.40	31.7	5.85	33.0	5.03
11 years	38.1	6.83	37.6	6.36	36.2	7.11	38.1	6.77
Boys								
6-11 years	27.7	4.98	27.7	4.93	25.5	5.38	27.0	5.23
6 years	17.1	4.50	17.0	3.61	16.3	5.90	16.5	4.88
7 years	22.5	3.71	22.6	4.01	20.2	6.16	21.6	4.40
8 years	26.9	3.92	26.4	4.38	24.1	5.01	26.3	3.83
9 years	30.3	4.25	29.4	4.79	28.2	6.21	29.1	5.12
10 years	33.3	5.57	33.4	5.94	31.0	5.57	32.3	5.31
11 years	37.8	7.37	36.8	6.36	35.8	6.90	37.5	7.30
Girls								
6-11 years	27.7	4.83	28.2	4.93	27.0	5.28	27.3	5.43
6 years	17.7	4.88	17.5	4.43	16.4	4.36	16.6	4.28
7 years	23.2	5.19	22.8	4.01	21.0	6.36	22.4	4.30
8 years	27.2	3.74	26.6	4.29	26.1	3.55	25.1	3.74
9 years	30.0	4.47	30.3	3.81	28.2	4.70	29.9	4.13
10 years	33.7	5.57	33.3	5.12	32.2	5.85	33.6	3.69
11 years	38.2	6.15	38.3	5.89	36.5	7.37	38.7	6.77

Table 3. Average standard scores in Reading and Arithmetic and combined subtests on the Wide Range Achievement Test for children, by region, age, and sex: United States, 1963-65

Age and sex	Reading subtest				Arithmetic subtest				Combined subtests			
	Northeast	Midwest	South	West	Northeast	Midwest	South	West	Northeast	Midwest	South	West
Both sexes	Standard score											
6-11 years-	...	...	...	...	...	...	...	...	102.2	101.7	96.0	99.8
6 years----------	101.3	100.1	100.6	100.1	101.9	101.2	98.0	99.1	101.2	100.0	99.2	99.6
7 years----------	102.4	102.5	95.5	99.6	102.6	102.0	94.8	99.5	102.2	102.3	95.2	99.8
8 years----------	102.6	102.1	94.7	100.3	103.8	101.5	96.4	98.8	103.0	102.1	95.0	99.2
9 years----------	102.5	102.9	93.5	101.1	102.7	101.7	95.8	100.5	102.6	102.1	94.5	100.7
10 years---------	102.8	102.9	94.5	100.1	101.8	101.5	97.1	100.5	102.4	102.0	95.0	100.2
11 years---------	102.0	101.7	95.6	100.5	101.7	100.7	97.9	101.7	101.7	101.6	96.6	100.1
Boys												
6-11 years-	...	...	...	...	...	...	...	...	101.4	100.3	94.5	98.8
6 years----------	99.6	98.5	100.6	99.3	100.8	100.5	98.0	98.8	100.4	98.8	99.7	99.0
7 years----------	101.6	99.4	93.8	98.5	101.2	101.6	93.6	98.1	101.1	100.2	94.0	98.6
8 years----------	100.9	100.0	90.4	99.1	103.1	101.1	92.4	100.7	101.8	100.6	90.2	99.8
9 years----------	102.1	100.6	92.0	99.0	103.0	100.2	95.8	99.3	102.5	100.1	93.4	98.8
10 years---------	102.6	101.7	93.5	97.8	101.2	101.5	95.0	98.8	102.0	101.2	93.7	98.3
11 years---------	100.3	99.9	94.2	98.5	101.1	99.1	96.9	100.5	100.3	100.5	95.3	98.3
Girls												
6-11 years-	...	...	...	...	...	...	...	...	103.0	103.2	97.4	101.0
6 years----------	103.0	101.8	100.6	100.8	103.0	102.2	98.4	99.1	102.0	101.2	98.8	100.1
7 years----------	103.0	104.8	96.9	101.4	103.6	102.3	96.0	100.9	103.4	104.4	96.5	100.9
8 years----------	103.8	104.4	99.6	101.1	104.2	101.9	99.9	96.4	104.3	103.6	99.8	98.5
9 years----------	102.9	104.9	95.0	102.9	102.0	103.0	95.8	101.7	102.6	104.1	95.6	102.6
10 years---------	102.9	104.1	95.3	102.3	102.2	101.2	98.5	102.0	102.7	102.9	96.4	102.1
11 years---------	103.5	103.4	96.6	102.7	101.9	102.1	98.5	102.9	103.1	102.6	97.8	101.9

Table 4. Grade equivalents of average raw scores in Reading and Arithmetic and of standard scores for the combined subtests of the Wide Range Achievement Test for children, by region, age, and sex: United States, 1963-65

Age and sex	Reading subtest				Arithmetic subtest				Combined subtests			
	Northeast	Midwest	South	West	Northeast	Midwest	South	West	Northeast	Midwest	South	West
Both sexes	Grade equivalent											
6 years	1.3	1.2	1.2	1.2	1.0	1.0	K.8	K.8	1.4	1.3	1.2	1.2
7 years	2.5	2.5	2.0	2.3	2.3	2.3	1.8	2.2	2.3	2.3	1.8	2.1
8 years	3.5	3.5	2.8	3.3	3.4	3.2	2.9	3.0	3.4	3.3	2.8	3.2
9 years	4.3	4.3	3.3	4.0	4.1	4.0	3.6	4.0	4.3	4.2	3.6	4.1
10 years	5.2	5.2	4.0	4.8	5.0	4.9	4.5	4.9	5.2	5.2	4.6	5.0
11 years	6.0	6.0	5.0	5.9	6.1	5.9	5.6	6.1	6.2	6.2	5.6	6.1
Boys												
6 years	1.2	1.2	1.2	1.2	1.0	1.0	K.8	K.8	1.3	1.2	1.2	1.2
7 years	2.4	2.2	1.8	2.2	2.3	2.3	1.7	2.0	2.2	2.2	1.7	2.2
8 years	3.3	3.3	2.5	3.2	3.3	3.2	2.7	3.2	3.3	3.3	2.5	3.3
9 years	4.2	4.0	3.2	3.8	4.1	3.9	3.6	3.9	4.2	4.1	3.6	3.9
10 years	5.2	5.1	3.9	4.4	4.9	4.9	4.4	4.7	5.2	5.1	4.5	4.9
11 years	5.8	5.7	4.7	5.5	6.0	5.7	5.5	5.9	6.1	6.1	5.5	5.8
Girls												
6 years	1.3	1.3	1.2	1.2	1.1	1.0	K.8	K.8	1.4	1.3	1.2	1.3
7 years	2.6	2.7	2.1	2.4	2.4	2.3	1.9	2.2	2.4	2.5	1.9	2.2
8 years	3.6	3.7	3.2	3.4	3.4	3.2	3.1	2.9	3.5	3.4	3.1	3.0
9 years	4.3	4.6	3.5	4.3	4.1	4.1	3.6	4.0	4.3	4.4	3.7	4.3
10 years	5.2	5.5	4.0	5.2	5.0	4.9	4.6	5.0	5.2	5.2	4.7	5.1
11 years	6.4	6.3	5.2	6.2	6.1	6.1	5.7	6.2	6.4	6.3	5.7	6.2

NOTE: K=Kindergarten.

Table 5. Averages and standard deviations (SD) of Reading and Arithmetic raw scores on the Wide Range Achievement Test for children, by race, age, and sex: United States, 1963-65

Age and sex	Total		White		Negro		Other races[1]
	Average	SD	Average	SD	Average	SD	Average
Both sexes	Reading raw score						
6-11 years	51.5	12.71	53.1	12.62	41.9	10.90	53.4
6 years	25.7	11.33	26.3	11.71	21.9	11.09	33.1
7 years	41.4	13.01	43.0	12.65	31.7	10.24	41.2
8 years	52.3	13.30	53.9	12.44	42.2	10.56	57.2
9 years	58.6	13.97	60.3	13.24	47.9	15.27	60.7
10 years	64.8	14.47	66.2	13.33	52.8	13.26	51.7
11 years	69.4	14.16	71.1	12.61	58.5	10.60	68.4
Boys							
6-11 years	50.2	12.97	51.8	12.58	39.7	10.68	55.0
6 years	24.9	11.87	25.5	12.41	21.2	11.25	32.2
7 years	39.8	13.23	41.5	12.86	29.1	12.94	40.0
8 years	50.2	14.16	52.0	13.50	38.8	8.91	60.1
9 years	57.1	14.30	58.9	12.66	45.0	15.53	60.0
10 years	63.4	14.62	65.1	13.64	52.0	15.84	71.2
11 years	67.8	14.76	69.8	14.36	54.9	13.56	57.5
Girls							
6-11 years	53.0	12.32	54.4	12.41	44.2	10.59	52.3
6 years	26.5	10.55	27.1	10.62	22.5	11.71	33.7
7 years	43.0	12.42	44.5	12.06	34.2	9.21	41.9
8 years	54.4	11.07	55.9	10.07	45.4	9.92	54.4
9 years	60.2	13.39	61.6	12.09	50.6	10.87	61.5
10 years	65.2	14.55	67.2	13.49	53.4	10.46	37.2
11 years	70.9	13.22	72.3	11.14	61.8	9.80	79.3
Both sexes	Arithmetic raw score						
6-11 years	27.3	5.08	27.8	4.98	23.9	5.73	29.5
6 years	16.9	4.65	17.2	4.57	14.5	4.13	18.8
7 years	22.1	4.40	22.6	4.11	18.5	6.85	24.0
8 years	26.1	4.10	26.4	3.92	24.0	5.55	30.1
9 years	29.5	4.47	29.9	4.36	26.7	7.20	30.2
10 years	32.9	5.48	33.5	5.40	29.1	4.40	36.5
11 years	37.4	6.90	38.3	6.56	32.2	4.87	38.0
Boys							
6-11 years	27.0	5.08	27.6	4.98	23.1	5.95	29.9
6 years	16.7	4.88	17.1	4.80	14.0	3.55	18.2
7 years	21.7	4.50	22.4	4.11	17.4	8.41	23.1
8 years	25.9	4.29	26.3	4.19	23.6	5.74	31.4
9 years	29.2	4.79	29.8	4.69	25.9	7.52	30.1
10 years	32.6	5.66	33.2	5.57	28.4	5.66	38.7
11 years	37.0	6.83	37.9	6.83	31.0	4.87	35.0
Girls							
6-11 years	27.6	5.08	28.0	5.08	24.7	5.48	29.2
6 years	17.0	4.36	17.4	4.43	14.9	4.05	19.2
7 years	22.4	4.50	22.8	4.21	19.6	5.67	25.3
8 years	26.3	3.83	26.6	3.74	24.4	5.55	28.9
9 years	29.6	4.25	30.0	3.93	27.5	4.69	30.5
10 years	33.2	5.31	33.7	5.12	29.8	4.23	34.3
11 years	37.9	6.70	38.6	6.49	33.3	4.33	41.0

[1]Estimates for averages and standard deviations for "Other races" are not as reliable as those for "Negro" and "White", hence the standard deviations are not shown.

Table 6. Average standard scores in Reading and Arithmetic and combined subtests on the Wide Range Achievement Test for children, by race, age, and sex: United States, 1963-65

Age and sex	Reading subtest			Arithmetic subtest			Combined subtests		
	White	Negro	Other races	White	Negro	Other races	White	Negro	Other races
	Standard score								
Both sexes									
6-11 years	...	...	...	...	...	...	101.6	89.6	103.1
6 years	101.3	95.4	110.6	101.2	92.5	106.4	101.0	93.6	104.0
7 years	102.0	88.7	99.8	101.6	87.2	106.0	102.0	87.6	103.4
8 years	101.9	88.7	105.7	101.1	92.0	114.4	101.6	89.8	112.1
9 years	101.8	88.8	102.2	101.7	91.0	102.7	101.6	89.0	102.0
10 years	102.2	88.3	87.2	101.8	89.8	110.0	101.9	88.0	99.8
11 years	101.6	88.8	98.9	102.1	88.9	101.5	101.6	89.6	95.4
Boys									
6-11 years	...	...	...	...	...	...	100.6	87.2	104.4
6 years	100.2	94.7	109.3	100.8	91.0	104.6	100.5	92.7	*
7 years	100.2	85.6	98.5	100.9	83.4	103.3	100.7	84.3	*
8 years	100.0	84.7	108.6	100.7	90.6	119.4	100.1	86.6	*
9 years	100.4	85.5	101.5	101.4	88.2	102.4	100.6	85.9	101.3
10 years	101.1	87.5	107.2	101.0	88.0	116.1	100.9	86.5	*
11 years	100.3	84.4	87.5	101.3	86.0	94.5	100.5	87.0	*
Girls									
6-11 years	...	...	...	...	...	...	102.7	92.0	101.8
6 years	102.2	96.0	111.2	101.9	93.7	107.7	101.5	94.6	*
7 years	103.5	91.7	100.8	102.3	91.4	111.0	103.2	91.0	*
8 years	103.9	92.1	102.4	101.9	93.6	110.2	103.2	92.9	*
9 years	103.1	91.6	103.0	102.0	93.5	103.8	102.7	92.1	*
10 years	103.2	88.9	71.7	102.4	91.9	103.9	102.9	89.4	*
11 years	102.8	92.3	110.8	102.7	91.1	108.0	102.7	92.3	*

Table 7. Grade equivalents of average raw scores in Reading and Arithmetic and of standard scores for the combined subtests of the Wide Range Achievement Test for children, by race, age, and sex: United States, 1963-65

Age and sex	Reading subtest				Arithmetic subtest				Combined subtests			
	Total	White	Negro	Other races	Total	White	Negro	Other races	Total	White	Negro	Other races
Both sexes	Grade equivalent											
6 years	1.2	1.3	1.0	1.7	K.9	1.0	K.3	1.3	1.3	1.4	K.7	1.2
7 years	2.3	2.5	1.6	2.3	2.2	2.3	1.2	2.7	2.2	2.3	1.2	2.4
8 years	3.3	3.4	2.4	3.8	3.1	3.2	2.7	4.1	3.2	3.3	2.4	4.0
9 years	3.9	4.1	2.8	4.2	4.0	4.0	3.2	4.1	4.1	4.2	3.2	4.2
10 years	4.9	5.2	3.3	3.2	4.8	5.0	3.9	5.6	5.0	5.2	4.0	5.0
11 years	5.7	6.0	3.9	5.5	5.8	6.1	4.6	6.1	6.1	6.2	4.9	5.5
Boys												
6 years	1.2	1.2	1.0	1.7	K.9	1.0	K.2	1.2	1.3	1.3	K.6	1.3
7 years	2.1	2.3	1.4	2.2	2.0	2.2	1.0	2.4	2.1	2.2	1.0	2.3
8 years	3.1	3.3	2.1	4.1	3.0	3.1	2.5	4.4	3.0	3.2	2.2	4.4
9 years	3.8	3.9	2.7	4.1	3.9	4.0	3.0	4.1	3.9	4.1	3.0	4.2
10 years	4.6	5.0	3.3	6.0	4.7	4.9	3.7	6.2	5.0	5.1	3.9	6.2
11 years	5.4	5.8	3.5	3.8	5.8	6.0	4.4	5.3	5.9	6.1	4.6	5.3
Girls												
6 years	1.3	1.3	1.1	1.7	1.0	1.0	K.4	1.4	1.3	1.4	K.8	1.8
7 years	2.5	2.6	1.8	2.3	2.2	2.3	1.5	2.9	2.3	2.4	1.5	2.6
8 years	3.5	3.6	2.7	3.5	3.2	3.2	2.7	3.8	3.3	3.4	2.6	3.7
9 years	4.1	4.3	3.1	4.3	4.0	4.1	3.4	4.2	4.2	4.3	3.5	4.3
10 years	5.0	5.3	3.4	2.0	4.9	5.0	4.0	5.1	5.1	5.2	4.2	3.8
11 years	5.9	6.2	4.3	7.6	6.0	6.2	4.9	6.8	6.2	6.3	5.2	5.7

NOTE: K=Kindergarten.

Table 8. Average Reading raw scores on the Wide Range Achievement Test for white and Negro children, by region, age, and sex: United States, 1963-65

Age and sex	White				Negro			
	Northeast	Midwest	South	West	Northeast	Midwest	South	West
	Raw score							
Both sexes								
6-11 years	54.0	55.0	50.6	52.0	44.7	44.8	39.6	42.1
6 years	26.8	25.6	27.5	25.6	22.5	22.4	21.2	23.2
7 years	44.8	44.6	40.4	41.8	33.2	35.2	29.9	31.8
8 years	56.0	55.2	50.9	52.9	44.3	43.5	40.2	45.0
9 years	62.2	62.2	55.7	60.1	51.7	52.0	45.5	50.1
10 years	68.2	68.3	62.4	65.3	57.7	56.3	49.5	53.5
11 years	73.3	72.2	67.8	70.9	61.2	61.9	56.9	58.2
Boys								
6-11 years	53.4	53.2	48.7	51.1	44.1	42.8	37.1	38.8
6 years	25.5	24.2	27.3	25.2	22.0	21.6	21.2	20.0
7 years	43.9	41.5	39.9	40.8	32.0	35.4	26.1	26.5
8 years	54.2	53.5	47.0	51.8	42.1	37.2	37.3	43.8
9 years	61.4	60.1	55.2	58.0	53.0	42.6	43.1	48.8
10 years	67.7	67.2	61.2	63.3	58.0	55.7	46.7	49.4
11 years	71.9	70.3	67.0	69.6	55.7	58.6	54.0	52.5
Girls								
6-11 years	54.6	56.7	52.4	53.2	45.2	46.9	42.4	45.3
6 years	28.0	27.1	27.7	25.9	22.7	22.9	21.2	26.1
7 years	45.5	47.2	40.7	42.9	33.5	34.5	33.8	36.4
8 years	57.3	57.1	54.7	53.9	45.2	49.2	43.7	45.9
9 years	62.9	64.2	56.0	62.3	49.6	56.4	48.4	51.3
10 years	68.6	69.3	63.2	67.1	56.1	57.0	51.0	56.0
11 years	74.4	73.9	68.2	72.5	64.9	63.0	59.0	65.5

Table 9. Average Arithmetic raw scores on the Wide Range Achievement Test for white and Negro children, by region, age, and sex: United States, 1963-65

Age and sex	White				Negro			
	Northeast	Midwest	South	West	Northeast	Midwest	South	West
	Raw score							
Both sexes								
6-11 years	28.1	28.2	27.4	27.4	24.9	25.6	23.0	23.3
6 years	17.8	17.4	17.2	16.8	13.7	15.7	14.3	15.0
7 years	23.3	23.0	21.9	22.2	19.7	20.9	17.2	18.9
8 years	27.4	26.6	25.9	25.9	24.9	26.3	23.2	23.4
9 years	30.5	30.1	29.3	29.7	28.3	28.1	26.0	27.6
10 years	34.0	33.7	32.8	33.4	30.6	30.4	28.5	28.0
11 years	38.8	38.0	37.8	38.5	33.6	33.5	31.6	32.5
Boys								
6-11 years	28.1	28.0	26.8	27.3	24.7	25.0	22.0	22.5
6 years	17.6	17.1	17.1	16.8	12.8	15.4	14.1	13.6
7 years	23.0	22.7	22.2	21.9	18.7	21.6	15.4	16.9
8 years	27.1	26.5	24.9	26.3	25.0	25.2	22.4	24.4
9 years	30.5	29.7	29.8	29.1	28.8	24.7	25.2	26.7
10 years	33.8	33.9	32.0	32.7	30.0	29.6	27.3	26.1
11 years	38.7	37.2	37.5	38.2	31.8	31.1	30.7	30.6
Girls								
6-11 years	28.0	28.4	28.0	27.5	25.2	26.2	24.1	24.1
6 years	18.1	17.6	17.2	16.7	14.4	15.8	14.4	16.1
7 years	23.6	23.2	21.6	22.5	20.1	19.9	19.1	20.4
8 years	27.5	26.6	27.0	25.4	24.6	26.7	24.0	22.6
9 years	30.4	30.4	28.8	30.2	27.2	29.5	26.8	27.3
10 years	34.1	33.4	33.4	33.9	30.8	31.6	29.1	29.0
11 years	38.8	38.8	37.9	38.9	34.4	34.6	32.0	34.4

Table 10. Average combined standard scores on the Wide Range Achievement Test for white and Negro children, by region, age, and sex: United States, 1963-65

Age and sex	White				Negro			
	Northeast	Midwest	South	West	Northeast	Midwest	South	West
	Standard score							
Both sexes								
6-11 years	103.5	102.6	99.4	100.5	92.3	93.1	86.9	90.6
6 years	102.0	100.4	102.2	99.8	93.8	94.7	92.0	97.2
7 years	103.9	103.2	99.4	100.7	89.9	93.9	84.6	86.1
8 years	104.4	102.9	98.4	99.7	92.5	94.1	86.9	91.4
9 years	103.7	102.9	98.2	101.2	93.4	90.8	86.6	90.6
10 years	103.8	103.4	98.5	101.2	92.4	91.7	84.6	86.2
11 years	103.4	102.4	99.6	100.8	92.0	92.4	87.2	91.1
Boys								
6-11 years	102.7	101.2	98.5	99.6	91.0	90.6	84.4	87.5
6 years	101.4	99.2	102.5	99.4	91.2	94.4	92.0	*
7 years	102.8	100.7	99.8	99.8	88.1	95.3	*	*
8 years	103.1	101.7	93.7	100.0	91.1	*	82.9	92.4
9 years	103.2	101.2	98.6	99.1	96.0	82.2	83.7	*
10 years	103.3	102.9	96.9	99.4	92.5	89.6	82.3	*
11 years	102.2	101.5	98.5	99.6	87.9	89.4	86.0	*
Girls								
6-11 years	104.4	104.0	100.3	101.5	93.5	95.8	89.5	93.6
6 years	102.7	101.6	101.9	100.1	96.4	*	92.1	*
7 years	105.0	105.7	98.9	101.6	91.7	92.5	89.6	92.3
8 years	105.8	104.1	103.1	99.4	93.9	98.5	90.9	90.5
9 years	104.2	104.6	97.7	103.4	90.7	99.4	89.4	92.4
10 years	104.3	103.8	100.1	103.0	92.3	93.8	87.0	*
11 years	104.6	103.4	100.8	102.1	96.0	95.5	88.3	96.4

Table 11. Averages and standard deviations (SD) of Reading raw scores on the Wide Range Achievement Test for children, by size of place of residence, age, and sex: United States, 1963-65

Age and sex	Total urban		Urbanized areas				Urban places outside urbanized areas			Rural areas	
	Average	SD	3 million or more	1,000,000-2,999,999	250,000-999,999	Less than 250,000	25,000 or more	10,000-24,999	2,500-9,999	Average	SD
	Average raw score										
Both sexes											
6-11 years--	51.7	13.00	52.4	55.7	52.5	49.8	49.8	50.4	50.9	50.0	12.45
6 years----------	25.9	10.38	26.5	30.4	27.1	24.5	25.3	22.4	24.2	24.2	12.18
7 years----------	41.5	13.16	42.7	45.1	40.8	40.8	40.0	43.8	38.5	40.3	12.72
8 years----------	52.4	13.08	52.4	56.1	51.2	49.8	52.7	52.1	55.8	51.2	13.37
9 years----------	58.8	14.05	60.5	61.3	61.2	55.1	57.5	56.3	59.7	57.1	14.22
10 years----------	65.0	14.47	66.0	67.8	65.0	61.6	59.5	63.2	67.1	62.9	13.86
11 years----------	69.7	14.36	70.3	73.8	70.3	69.8	69.9	69.9	67.9	67.0	12.82
Boys											
6-11 years--	50.4	13.18	50.4	55.2	51.2	47.9	50.1	48.5	48.5	48.6	12.66
6 years----------	25.0	10.70	24.0	30.1	25.5	23.8	24.2	23.7	23.7	24.4	13.43
7 years----------	39.9	13.67	40.6	44.0	38.9	40.4	36.0	*	37.9	38.9	12.21
8 years----------	50.4	14.02	50.3	54.2	49.0	48.3	55.2	*	52.8	48.2	13.87
9 years----------	57.2	14.05	58.6	60.9	61.0	*	54.1	56.8	56.8	56.1	14.71
10 years----------	63.6	14.24	65.0	67.8	65.3	*	60.2	*	63.9	61.6	14.77
11 years----------	68.1	15.24	67.9	72.8	68.7	66.4	68.0	67.1	67.1	65.5	13.62
Girls											
6-11 years--	53.2	12.62	54.4	56.2	53.9	51.8	49.5	53.2	53.2	51.4	11.93
6 years----------	26.8	10.00	29.0	30.6	28.6	25.2	25.7	24.6	24.6	24.0	10.39
7 years----------	43.1	12.65	44.4	46.3	43.1	41.0	43.7	*	38.6	41.7	12.36
8 years----------	54.4	11.43	54.4	57.7	53.3	50.9	48.1	*	58.3	54.3	10.35
9 years----------	60.4	12.75	62.0	61.7	61.3	60.0	60.6	61.5	61.5	58.0	13.89
10 years----------	65.3	14.62	66.8	67.8	64.4	63.6	*	*	69.6	64.0	13.79
11 years----------	71.2	12.48	72.3	74.6	71.8	73.4	70.9	*	68.0	68.4	12.01

Table 12. Averages and standard deviations (SD) of Arithmetic raw scores on the Wide Range Achievement Test for children, by size of place of residence, age, and sex: United States, 1963-65

Age and sex	Total urban		Urbanized areas				Urban places outside urbanized areas			Rural areas	
	Average	SD	3 million or more	1,000,000-2,999,999	250,000-999,999	Less than 250,000	25,000 or more	10,000-24,999	2,500-9,999	Average	SD
	Average raw score										
Both sexes											
6-11 years--	27.4	5.08	27.6	28.9	27.6	26.2	27.0	27.6	26.9	26.7	5.08
6 years----------	17.0	4.50	17.2	19.0	16.8	16.6	16.3	16.6	16.6	16.3	4.80
7 years----------	22.1	4.60	22.8	23.0	21.6	21.5	21.6	23.4	20.9	21.8	4.11
8 years----------	26.2	4.01	26.8	27.0	25.5	25.3	26.5	26.4	26.6	25.6	4.43
9 years----------	29.5	4.58	30.0	30.5	30.0	27.7	29.2	29.6	30.1	29.1	4.25
10 years----------	33.0	5.57	33.5	34.4	32.9	30.6	34.1	33.5	33.5	32.3	5.31
11 years----------	37.5	6.97	37.2	39.7	38.5	36.8	36.7	37.0	37.3	36.6	6.90
Boys											
6-11 years--	27.1	5.23	27.2	29.0	27.2	25.8	27.4	27.4	26.3	26.4	4.98
6 years----------	16.7	4.65	16.6	18.6	16.4	16.3	16.8	16.0	16.1	16.5	5.53
7 years----------	21.7	4.50	22.3	23.0	20.9	21.9	20.5	22.6	20.5	21.6	4.30
8 years----------	26.0	4.10	26.6	27.0	25.3	25.1	27.7	26.2	26.6	25.0	4.55
9 years----------	29.2	4.90	29.7	30.7	30.2	26.7	29.0	29.0	30.0	28.8	4.69
10 years----------	32.7	5.76	33.2	34.8	32.9	29.8	32.3	33.4	32.4	31.8	5.22
11 years----------	37.1	7.04	36.4	39.4	37.9	35.3	36.8	37.6	36.6	36.2	6.56
Girls											
6-11 years--	27.7	4.93	28.0	28.8	27.9	26.7	26.6	27.8	27.5	27.1	5.23
6 years----------	17.1	4.57	17.6	19.2	17.3	16.7	15.8	17.4	17.0	16.1	4.28
7 years----------	22.4	4.70	23.1	22.9	22.4	21.0	22.5	24.1	21.1	22.0	3.91
8 years----------	26.3	3.83	26.8	26.9	25.6	25.4	25.1	26.4	26.4	26.3	3.83
9 years----------	29.6	4.25	30.2	30.1	29.8	28.8	29.3	29.7	30.0	29.3	4.04
10 years----------	33.3	5.40	33.6	33.8	32.7	31.3	36.7	*	34.3	32.6	5.31
11 years----------	38.0	6.29	37.9	39.8	39.0	38.4	36.4	36.6	37.6	37.0	7.17

Table 13. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for white children, by size of place of residence, age, and sex: United States, 1963-65

Age and sex	Total urban	Urbanized areas				Urban places outside urbanized areas			Rural areas
		3 million or more	1,000,000-2,999,999	250,000-999,999	Less than 250,000	25,000 or more	10,000-24,999	2,500-9,999	
Both sexes	Reading raw score								
6-11 years	53.3	54.8	57.2	55.2	53.1	49.7	51.1	51.8	51.1
6 years	26.5	27.3	30.7	28.6	26.3	24.6	22.2	24.7	24.7
7 years	43.2	45.5	46.7	44.0	42.0	40.2	43.9	39.0	41.7
8 years	54.0	55.5	58.1	53.3	53.3	51.6	53.0	56.7	52.0
9 years	60.5	63.5	62.5	63.3	59.9	57.6	56.6	59.7	58.2
10 years	66.4	69.1	69.4	68.2	65.7	59.5	64.5	68.0	64.6
11 years	71.3	74.1	75.4	72.7	72.7	70.5	70.8	69.2	68.0
Boys 6-11 years	52.0	52.6	56.9	54.1	51.9	50.0	49.1	49.0	49.9
Girls 6-11 years	54.6	57.0	57.6	56.4	54.4	49.5	54.0	54.5	52.4
Both sexes	Arithmetic raw score								
6-11 years	27.9	28.2	29.4	28.6	27.2	26.9	27.8	27.2	27.2
6 years	17.3	17.9	19.1	17.5	17.1	16.2	16.6	16.9	16.7
7 years	22.7	23.6	23.3	22.9	21.9	21.6	23.5	20.9	22.5
8 years	26.4	27.3	27.4	26.1	26.0	26.5	26.7	26.7	25.9
9 years	30.0	30.8	30.7	30.5	28.8	29.0	29.3	30.0	28.5
10 years	33.6	34.3	34.9	34.0	31.6	34.1	34.2	33.8	32.7
11 years	38.4	38.8	40.3	39.7	38.0	37.1	38.1	38.0	37.2
Boys 6-11 years	27.7	27.8	29.5	28.5	26.8	27.3	27.7	26.5	27.0
Girls 6-11 years	28.1	28.6	29.3	28.6	27.6	26.6	28.0	27.9	27.4

Table 14. Average Reading and Arithmetic raw scores on the Wide Range Achievement test for Negro children, by size of place of residence, age, and sex: United States, 1963-65

Age and sex	Total urban	Urbanized areas				Urban places outside urbanized areas			Rural areas
		3 million or more	1,000,000-2,999,999	250,000-999,999	Less than 250,000	25,000 or more	10,000-24,999	2,500-9,999	
Both sexes	Reading raw score								
6-11 years	42.4	45.3	44.7	41.1	38.6	48.4	40.8	41.8	37.0
6 years	22.3	23.7	28.4	22.0	18.9	25.7	28.5	19.9	18.4
7 years	32.4	33.8	35.1	30.5	36.2	38.0	57.0	35.2	25.8
8 years	42.4	43.3	44.5	41.5	41.7	48.5	39.7	42.3	40.5
9 years	48.1	49.7	54.7	51.9	42.0	59.5	61.4	60.8	42.7
10 years	53.6	58.7	57.4	51.2	49.7	-	34.5	58.7	45.3
11 years	58.6	61.1	59.8	60.0	52.5	55.0	54.5	54.8	57.2
Boys 6-11 years	40.3	43.5	43.0	39.2	34.5	51.4	37.0	43.4	34.1
Girls 6-11 years	44.6	47.0	46.4	43.2	43.1	42.0	43.5	40.5	40.2
Both sexes	Arithmetic raw score								
6-11 years	24.2	25.5	25.5	23.2	22.9	27.3	*	23.9	21.2
6 years	14.8	14.8	17.8	14.7	15.0	16.3	*	13.5	12.2
7 years	18.9	20.2	20.8	17.3	19.9	23.6	*	21.3	14.9
8 years	24.2	25.4	25.0	22.8	23.9	25.5	*	23.1	22.4
9 years	27.0	27.3	29.1	28.3	24.7	34.0	*	30.1	24.2
10 years	29.4	31.3	30.2	28.4	28.2	-	*	30.4	26.4
11 years	32.4	33.1	34.2	32.9	30.4	27.8	*	30.4	30.8
Boys 6-11 years	23.5	25.0	25.5	21.9	22.5	28.8	*	24.3	19.8
Girls 6-11 years	24.9	26.0	25.5	24.7	23.4	24.1	*	23.5	22.8

Table 15. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children in the Northeast, by size of place of residence, age, and sex: United States, 1963-65

Age and sex	Total urban	Urbanized areas				Urban places outside urbanized areas			Rural areas
		3 million or more	1,000,000-2,999,999	250,000-999,999	Less than 250,000	25,000 or more	10,000-24,999	2,500-9,999	
Both sexes	Reading raw score								
6-11 years	52.8	51.7	55.8	57.2	52.6	51.5	55.3	52.8	53.6
6 years	26.3	26.3	25.8	33.1	28.9	24.5	28.6	25.8	26.0
7 years	43.4	42.2	51.7	47.0	40.1	41.4	52.0	48.1	43.6
8 years	54.3	52.8	57.7	60.0	54.9	53.0	64.0	63.0	57.0
9 years	60.9	60.5	62.0	62.8	56.7	64.2	83.2	74.9	61.8
10 years	66.6	65.8	71.3	70.2	67.8	57.8	-	69.0	68.8
11 years	71.3	69.6	76.3	73.1	72.9	69.8	77.5	92.0	73.3
Boys 6-11 years	52.3	50.1	58.0	54.0	50.8	54.5	55.3	53.0	53.4
Girls 6-11 years	53.5	53.2	53.6	61.2	54.3	48.2	55.3	52.5	53.7
Both sexes	Arithmetic raw score								
6-11 years	27.7	27.5	28.2	29.6	27.5	27.2	29.0	28.0	27.8
6 years	17.4	17.0	17.8	19.5	19.1	17.0	21.2	16.3	17.6
7 years	22.9	22.8	24.1	25.2	21.9	22.0	33.0	25.5	23.1
8 years	27.1	26.9	27.2	29.0	27.0	27.1	31.7	30.8	27.5
9 years	30.2	30.5	29.7	32.2	28.9	30.4	41.8	38.0	30.0
10 years	33.5	33.5	34.5	35.4	33.1	29.8	-	36.7	33.4
11 years	38.0	37.6	41.4	38.0	37.1	37.9	38.0	52.5	38.8
Boys 6-11 years	27.7	27.0	29.1	28.8	27.0	29.2	30.8	29.4	27.9
Girls 6-11 years	27.7	27.9	27.3	30.5	28.0	24.8	28.0	25.6	27.8

Table 16. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children in the Midwest, by size of place of residence, age, and sex: United States, 1963-65

Age and sex	Total urban	Urbanized areas				Urban places outside urbanized areas			Rural areas
		3 million or more	1,000,000-2,999,999	250,000-999,999	Less than 250,000	25,000 or more	10,000-24,999	2,500-9,999	
Both sexes	Reading raw score								
6-11 years	54.1	53.2	57.3	49.2	57.8	52.6	52.4	53.8	53.2
6 years	25.6	25.4	30.7	21.2	23.0	30.9	20.8	26.6	23.6
7 years	43.5	43.2	46.3	38.7	46.7	43.2	44.5	46.7	43.2
8 years	54.1	53.4	57.6	47.2	57.9	50.1	57.6	61.1	54.3
9 years	61.4	60.2	62.0	61.2	66.3	60.4	59.6	61.8	61.5
10 years	66.8	65.0	69.3	63.3	71.8	66.4	66.5	68.7	67.7
11 years	71.3	70.3	76.6	66.6	72.8	72.1	70.1	70.8	69.9
Boys 6-11 years	52.3	50.6	55.3	47.8	57.4	53.2	49.7	48.0	52.2
Girls 6-11 years	55.9	56.2	59.5	50.9	58.2	52.0	55.3	58.2	54.2
Both sexes	Arithmetic raw score								
6-11 years	28.0	27.5	29.8	26.2	28.3	27.4	28.2	27.6	27.6
6 years	17.2	17.0	19.3	15.2	16.1	18.3	17.4	18.3	16.9
7 years	22.7	22.6	23.6	21.3	23.0	23.0	23.3	22.8	22.8
8 years	26.5	27.0	27.7	25.3	26.6	25.7	27.1	27.0	26.3
9 years	29.9	29.4	31.0	29.3	30.1	29.3	30.4	30.5	30.0
10 years	33.4	32.8	35.2	32.0	32.8	34.3	35.1	34.6	33.2
11 years	37.6	35.8	40.7	36.0	34.1	37.4	38.9	36.1	37.2
Boys 6-11 years	27.7	27.0	29.4	26.0	28.1	28.2	27.1	26.2	27.7
Girls 6-11 years	28.3	28.0	30.2	26.5	28.4	26.6	29.4	28.6	27.6

Table 17. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children in the South, by size of place of residence, age, and sex: United States, 1963-65

Age and sex	Total urban	Urbanized areas				Urban places outside urbanized areas			Rural areas
		3 million or more	1,000,000-2,999,999	250,000-999,999	Less than 250,000	25,000 or more	10,000-24,999	2,500-9,999	
Both sexes	Reading raw score								
6-11 years	47.7	-	48.6	52.4	42.7	53.5	46.1	50.3	46.3
6 years	25.9	-	29.0	32.4	24.2	32.9	21.9	24.1	23.9
7 years	37.7	-	38.0	37.4	40.3	47.4	44.2	37.0	35.7
8 years	47.9	-	49.2	50.9	45.1	55.6	51.6	53.8	45.5
9 years	52.6	-	56.4	59.2	45.7	52.8	56.0	59.7	51.6
10 years	59.2	-	57.4	64.5	52.6	73.6	56.7	63.9	57.2
11 years	65.4	-	68.6	68.7	65.3	70.8	68.0	69.6	62.7
Boys 6-11 years	45.6	-	48.5	52.2	40.2	47.2	44.5	50.0	43.4
Girls 6-11 years	49.8	-	48.7	52.5	45.7	59.3	48.7	50.6	49.0
Both sexes	Arithmetic raw score								
6-11 years	26.3	-	27.4	28.1	24.3	29.5	25.2	27.4	25.6
6 years	16.4	-	18.9	18.0	16.6	20.2	15.0	16.2	15.3
7 years	20.7	-	22.1	20.3	21.1	24.0	22.5	21.1	20.0
8 years	25.2	-	26.4	26.1	24.5	28.3	25.5	26.9	24.3
9 years	28.2	-	30.2	29.7	26.0	34.0	30.0	30.4	27.9
10 years	31.8	-	31.4	34.4	28.6	38.5	32.2	33.9	30.6
11 years	36.3	-	37.6	38.9	36.6	39.0	36.7	38.6	34.9
Boys 6-11 years	25.6	-	27.5	28.1	23.8	28.4	25.2	27.4	24.3
Girls 6-11 years	27.0	-	27.2	28.1	25.0	30.5	25.3	27.3	26.8

Table 18. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children in the West, by size of place of residence, age, and sex: United States, 1963-65

Age and sex	Total urban	Urbanized areas				Urban places outside urbanized areas			Rural areas
		3 million or more	1,000,000-2,999,999	250,000-999,999	Less than 250,000	25,000 or more	10,000-24,999	2,500-9,999	
Both sexes	Reading raw score								
6-11 years	51.6	53.6	56.0	53.5	48.6	42.3	52.3	50.0	49.6
6 years	25.6	30.0	34.7	24.6	18.5	11.7	25.1	23.7	24.0
7 years	41.0	43.7	40.9	44.8	37.2	33.0	44.4	36.8	42.3
8 years	52.3	48.9	57.0	52.0	46.9	50.5	50.0	56.0	51.9
9 years	59.7	61.3	62.9	64.1	56.3	49.3	54.8	59.3	58.5
10 years	64.5	69.8	68.1	66.3	57.5	48.1	68.1	68.9	63.7
11 years	70.3	73.6	72.0	74.5	71.9	65.0	75.4	67.0	67.0
Boys 6-11 years	50.5	51.2	56.0	51.7	49.0	43.4	51.1	47.0	48.8
Girls 6-11 years	52.9	56.0	56.1	55.5	48.0	41.2	54.4	53.1	50.3
Both sexes	Arithmetic raw score								
6-11 years	27.1	28.1	28.6	27.4	25.3	24.7	29.1	26.2	26.8
6 years	16.2	18.2	19.7	16.5	10.1	8.4	18.5	16.4	16.2
7 years	21.9	23.2	21.4	22.7	20.7	18.8	26.1	20.0	22.9
8 years	25.8	25.7	26.8	25.0	25.2	26.0	27.7	26.0	25.6
9 years	29.5	30.0	30.3	31.0	27.5	25.6	29.4	30.0	29.5
10 years	33.0	35.0	34.1	32.1	30.0	33.5	35.0	32.9	33.2
11 years	38.1	39.0	38.7	40.0	36.8	35.1	39.9	37.4	37.8
Boys 6-11 years	27.0	28.0	28.9	26.8	25.9	23.8	29.5	25.1	26.9
Girls 6-11 years	27.4	28.2	28.2	28.0	24.4	25.7	28.2	27.2	26.6

Table 19. Average standard scores in Reading on the Wide Range Achievement Test for children, by size of place of residence, age, and sex: United States, 1963-65

Age and sex	Total urban	Urbanized areas				Urban places outside urbanized areas			Rural areas
		3 million or more	1,000,000-2,999,999	250,000-999,999	Less than 250,000	25,000 or more	10,000-24,999	2,500-9,999	
	Standard score								
Both sexes									
6 years	100.8	101.5	106.6	102.2	99.0	100.0	95.9	98.7	98.7
7 years	100.2	101.7	104.1	99.3	99.3	98.5	102.8	96.5	98.8
8 years	100.4	100.4	104.2	98.8	96.8	99.6	100.1	103.8	98.8
9 years	100.3	102.0	102.8	102.7	96.1	98.8	97.3	101.2	98.2
10 years	101.0	102.0	103.8	101.0	97.1	95.0	98.7	103.1	98.4
11 years	100.2	100.8	104.7	100.8	100.3	100.4	100.4	98.4	97.5
Boys									
6 years	99.5	98.5	106.2	100.2	98.1	98.7	97.9	97.9	98.9
7 years	98.4	99.1	103.0	96.9	98.9	94.0	*	95.9	96.9
8 years	97.6	97.4	102.2	96.0	95.3	103.2	*	100.8	95.2
9 years	98.3	100.1	102.4	102.5	*	95.1	97.8	97.8	97.1
10 years	99.1	101.0	103.8	101.3	*	95.7	*	99.4	97.1
11 years	98.6	98.4	103.3	99.2	96.9	98.5	97.6	97.6	96.0
Girls									
6 years	101.8	105.0	106.9	104.6	99.8	100.6	99.1	99.1	98.5
7 years	102.1	103.4	105.4	102.1	99.5	102.7	*	96.6	100.6
8 years	102.4	102.4	106.2	101.3	98.4	95.1	*	106.8	102.3
9 years	101.9	103.5	103.2	102.8	101.5	102.1	103.0	103.0	99.5
10 years	101.3	102.8	103.8	100.1	99.1	*	*	105.6	99.5
11 years	101.7	102.8	105.6	102.3	104.1	101.4	*	98.5	98.9

Table 20. Average standard scores in Arithmetic on the Wide Range Achievement Test for children, by size of place of residence, age, and sex: United States, 1963-65

Age and sex	Total urban	Urbanized areas				Urban places outside urbanized areas			Rural areas
		3 million or more	1,000,000-2,999,999	250,000-999,999	Less than 250,000	25,000 or more	10,000-24,999	2,500-9,999	
	Standard score								
Both sexes									
6 years	100.5	101.2	107.0	99.8	99.1	98.0	99.1	99.1	98.0
7 years	99.8	102.3	103.0	98.1	97.8	98.1	104.2	95.7	98.8
8 years	100.3	102.7	103.5	97.8	97.0	101.5	101.1	101.9	98.1
9 years	100.5	102.0	103.8	102.0	94.1	99.6	100.8	102.4	99.3
10 years	100.5	101.8	104.2	100.2	94.0	103.3	101.8	101.8	98.8
11 years	100.5	99.9	105.2	102.5	99.1	98.9	99.5	100.1	98.7
Boys									
6 years	99.4	99.1	105.8	98.4	98.0	99.8	97.0	97.4	98.8
7 years	98.4	100.6	103.0	95.7	99.2	94.5	101.6	94.5	98.1
8 years	99.5	101.9	103.5	97.0	96.4	106.0	100.3	101.9	96.0
9 years	99.6	101.1	104.4	102.7	91.0	99.0	99.0	102.0	98.2
10 years	99.8	101.0	105.4	100.2	91.9	98.8	101.5	99.0	97.4
11 years	99.7	98.3	104.5	101.3	95.4	99.1	100.7	98.7	97.9
Girls									
6 years	100.8	102.6	107.7	101.6	99.4	96.4	101.9	100.5	97.4
7 years	100.9	103.3	102.6	100.9	96.0	101.2	106.4	96.4	99.5
8 years	100.7	102.7	103.1	98.1	97.4	96.4	101.1	101.1	100.7
9 years	100.8	102.7	102.4	101.4	98.2	99.9	101.1	102.0	99.9
10 years	101.2	102.0	102.5	99.8	95.9	110.6	*	103.9	99.5
11 years	101.5	101.3	105.5	103.5	102.3	98.3	98.7	100.7	99.5

Table 21. Average combined standard scores on the Wide Range Achievement Test for children, by size of place of residence, age, and sex: United States, 1963-65

Age and sex	Urbanized areas				Urban places outside urbanized areas			Rural areas
	3 million or more	1,000,000-2,999,999	250,999-999,999	Less than 250,000	25,000 or more	10,000-24,999	2,500-9,999	
	Standard score							
Both sexes								
6-11 years---	101.5	104.2	100.3	96.9	98.7	100.1	100.1	98.2
6 years----------	101.4	106.0	101.4	98.4	98.2	98.2	98.2	98.0
7 years----------	102.0	104.2	99.0	97.8	95.4	103.4	96.9	98.5
8 years----------	101.4	104.2	98.0	96.6	99.6	100.2	102.2	98.4
9 years----------	101.9	103.3	102.3	84.8	98.8	98.8	101.7	98.4
10 years----------	101.5	103.8	100.2	95.0	99.2	99.9	102.2	98.3
11 years----------	100.8	103.6	101.3	99.8	99.4	100.5	99.6	97.8
Boys								
6-11 years---	99.8	103.9	99.0	95.2	98.0	99.0	98.5	97.0
6 years----------	99.2	105.6	99.6	98.2	99.6	98.1	96.8	98.5
7 years----------	99.8	103.4	96.1	98.2	94.0	100.3	97.4	97.4
8 years----------	99.9	103.4	96.3	95.6	103.8	99.3	100.6	95.1
9 years----------	100.4	103.4	102.3	*	96.4	96.1	100.0	97.4
10 years----------	100.6	104.4	100.5	*	97.5	*	99.2	97.0
11 years----------	99.1	103.3	99.8	96.7	98.6	99.7	98.3	96.5
Girls								
6-11 years---	103.2	104.5	101.6	98.7	99.4	101.7	101.7	99.4
6 years----------	103.5	106.3	103.2	98.5	96.8	*	99.5	97.4
7 years----------	104.1	104.9	102.0	97.5	102.9	*	96.4	99.6
8 years----------	102.9	105.0	99.6	97.7	95.4	101.2	103.8	101.8
9 years----------	103.4	103.2	102.3	98.7	101.1	101.6	103.4	99.3
10 years----------	102.4	103.1	100.0	97.3	*	*	105.2	99.6
11 years----------	102.5	103.8	102.8	102.8	100.1	*	100.8	99.0

Table 22. Average combined standard scores on the Wide Range Achievement Test for white and Negro children, by size of place of residence, age, and sex: United States, 1963-65

Race, age, and sex	Urbanized areas				Urban places outside urbanized areas			Rural areas
	3 million or more	1,000,000-2,999,999	250,999-999,999	Less than 250,000	25,000 or more	10,000-24,999	2,500-9,999	
	Standard score							
White								
Both sexes 6-11 years	104.4	105.5	103.0	100.1	98.6	100.7	100.8	99.5
6 years	103.0	106.6	103.2	100.8	97.8	97.8	99.1	98.8
7 years	105.2	105.8	103.4	99.2	98.2	103.9	97.3	100.5
8 years	104.2	106.0	100.3	100.4	99.7	101.3	102.9	99.6
9 years	105.0	104.3	104.3	99.4	98.0	99.0	101.2	99.7
10 years	104.6	105.4	103.6	98.6	99.2	101.4	103.0	99.8
11 years	104.6	104.9	103.8	102.2	100.0	101.8	100.9	98.6
Boys 6-11 years	102.6	105.3	102.0	98.9	97.8	99.3	98.9	98.6
Girls 6-11 years	106.2	105.6	104.0	101.4	99.4	102.8	102.7	100.4
Negro								
Both sexes 6-11 years	93.0	94.5	88.8	86.2	98.0	*	92.7	82.8
6 years	95.5	101.5	95.2	89.2	-	*	90.4	87.9
7 years	91.6	93.8	84.8	90.2	-	-	95.7	78.0
8 years	93.0	94.2	85.7	88.2	92.0	*	85.0	84.2
9 years	90.8	94.2	93.4	82.3	108.4	-	103.2	81.4
10 years	94.0	90.4	85.0	81.7	-	-	94.5	80.6
11 years	92.2	90.6	90.6	86.1	83.5	*	86.4	86.6
Boys 6-11 years	91.3	92.5	86.3	82.9	101.8	*	*	*
Girls 6-11 years	94.5	96.5	91.4	89.8	89.9	*	91.5	87.0

Table 23. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children, by population change from 1950 to 1960 in size of place of residence, age, and sex: United States, 1963-65

Age and sex	Rate of population change							
	Loss	Below-average gain	Average gain	Above-average gain	Loss	Below-average gain	Average gain	Above-average gain
	Reading raw score				Arithmetic raw score			
Both sexes								
6-11 years	49.3	51.6	51.2	54.3	26.4	27.2	27.2	28.3
6 years	24.1	26.0	26.2	26.7	16.4	16.5	16.9	17.9
7 years	39.2	41.2	41.8	43.5	21.1	22.0	22.3	22.8
8 years	51.3	52.4	51.9	53.7	25.4	26.6	26.4	26.3
9 years	55.4	59.8	58.9	60.7	28.6	29.6	29.7	30.1
10 years	62.2	64.7	63.2	67.3	31.9	33.3	32.7	33.8
11 years	66.2	69.9	69.2	72.5	36.3	37.3	37.6	38.7
Boys								
6-11 years	48.0	51.1	49.3	52.4	26.1	27.2	26.8	28.0
6 years	23.9	26.0	24.9	24.9	16.2	16.6	16.6	17.6
7 years	38.0	38.7	40.7	41.6	20.8	21.2	22.1	22.7
8 years	49.6	50.2	50.2	50.8	25.1	26.4	26.2	26.0
9 years	54.3	58.5	57.0	58.6	28.4	29.4	29.4	29.8
10 years	60.1	63.8	61.9	67.4	31.4	32.8	32.3	33.7
11 years	64.4	69.1	67.7	70.1	35.9	36.9	37.3	37.7
Girls								
6-11 years	50.6	52.0	53.2	56.3	26.8	27.1	27.7	28.7
6 years	24.2	25.9	27.8	28.8	16.5	16.4	17.3	18.4
7 years	40.4	43.4	43.0	45.3	21.5	22.7	22.5	22.9
8 years	52.9	54.6	53.5	56.6	25.6	26.7	26.4	26.5
9 years	56.4	61.0	60.7	62.9	28.7	29.7	30.0	30.3
10 years	64.0	65.4	64.5	67.0	32.3	33.7	33.0	33.8
11 years	67.8	70.4	70.8	74.7	36.6	37.6	37.8	39.5

Table 24. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for white and Negro children, by population change from 1950 to 1960 in size of place of residence, age, and sex: United States, 1963-65

Race, age, and sex	Rate of population change							
	Loss	Below-average gain	Average gain	Above-average gain	Loss	Below-average gain	Average gain	Above-average gain
	Reading raw score				Arithmetic raw score			
White								
Both sexes 6-11 years	50.3	52.7	54.4	55.4	26.8	27.5	28.3	28.7
6 years	24.4	26.3	27.8	27.2	16.6	16.7	17.7	18.3
7 years	40.6	42.3	44.7	44.7	21.7	22.5	23.3	23.2
8 years	52.1	53.8	55.3	55.2	25.6	26.8	27.0	26.7
9 years	56.5	61.4	62.5	61.6	29.0	29.9	30.7	30.3
10 years	63.3	65.9	67.6	68.9	32.2	33.7	34.2	34.2
11 years	67.0	71.1	72.9	74.1	36.7	37.9	39.3	39.5
Boys 6-11 years	49.1	52.2	52.7	53.5	26.6	27.6	28.0	28.4
Girls 6-11 years	51.5	53.2	56.3	57.5	27.0	27.5	28.7	29.1
Negro								
Both sexes 6-11 years	33.5	43.8	42.3	43.6	19.8	24.7	24.1	24.8
6 years	18.8	23.2	21.8	22.7	12.7	15.0	14.6	14.7
7 years	21.5	32.6	34.3	31.5	13.7	18.7	19.6	19.4
8 years	34.0	45.3	42.4	41.8	19.7	25.6	24.4	23.0
9 years	40.5	49.4	48.4	51.8	23.3	27.7	26.9	28.8
10 years	45.1	54.1	53.0	55.8	26.0	29.3	29.1	30.7
11 years	52.9	62.6	58.3	58.3	28.8	34.0	32.5	32.0
Boys 6-11 years	29.4	43.5	39.2	42.4	17.6	24.6	23.2	24.3
Girls 6-11 years	37.7	44.1	45.3	44.9	22.0	24.7	25.0	25.3

Table 25. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children, by population change from 1950 to 1960 in size of place of residence, region, age, and sex: United States, 1963-65

Region, age, and sex	Rate of population change							
	Loss	Below-average gain	Average gain	Above-average gain	Loss	Below-average gain	Average gain	Above-average gain
	Reading raw score				Arithmetic raw score			
Northeast								
Both sexes 6-11 years	53.4	51.4	53.5	53.7	27.5	27.2	28.4	28.0
6 years	27.5	25.7	28.0	24.8	18.1	16.5	17.7	17.8
7 years	45.0	42.2	44.2	42.6	22.7	23.0	23.2	22.9
8 years	53.8	54.5	55.7	55.3	26.5	27.5	27.3	27.0
9 years	58.8	60.3	63.2	62.7	29.0	30.5	31.8	30.0
10 years	68.0	66.3	66.6	66.9	33.2	33.7	34.9	32.5
11 years	72.6	70.3	70.6	73.2	37.8	37.0	39.4	38.4
Boys 6-11 years	54.0	49.5	52.4	53.7	27.7	26.7	28.3	28.4
Girls 6-11 years	52.8	53.2	54.5	53.6	27.3	27.7	28.5	27.4
Midwest								
Both sexes 6-11 years	52.0	55.8	52.8	55.4	27.3	27.9	28.0	28.3
6 years	23.0	27.4	25.2	26.0	16.7	17.3	16.8	18.1
7 years	41.8	47.6	42.4	44.6	22.4	22.9	23.0	22.7
8 years	52.2	56.9	51.1	56.6	25.2	27.4	27.0	26.3
9 years	60.4	64.6	61.3	60.5	28.9	30.5	30.0	30.1
10 years	65.9	68.2	65.7	68.4	33.4	32.7	33.5	33.9
11 years	69.7	70.0	70.3	73.9	37.3	36.9	37.7	38.0
Boys 6-11 years	50.9	56.1	51.5	51.9	27.2	28.2	28.0	27.4
Girls 6-11 years	53.1	55.6	54.2	59.2	27.3	27.6	28.1	29.2
South								
Both sexes 6-11 years	43.7	50.5	46.2	53.8	24.6	27.0	25.6	29.1
6 years	21.5	30.9	25.5	29.7	14.4	17.6	16.7	18.4
7 years	32.7	39.0	39.4	42.2	18.7	21.0	21.4	22.6
8 years	44.5	47.8	47.9	53.1	23.9	25.1	25.6	26.7
9 years	48.9	57.4	52.5	59.5	27.1	29.4	27.9	31.0
10 years	54.1	63.8	55.7	67.0	29.5	34.0	30.4	35.0
11 years	59.9	72.9	64.9	69.0	33.7	39.0	35.6	39.4
Boys 6-11 years	41.1	48.0	44.2	52.6	23.8	26.2	24.9	28.6
Girls 6-11 years	46.2	52.8	48.5	55.0	25.4	27.8	26.4	29.6
West								
Both sexes 6-11 years	51.1	49.6	52.5	53.5	27.2	26.8	26.7	28.0
6 years	25.4	23.2	27.3	27.7	17.2	15.5	16.8	17.7
7 years	40.7	38.9	41.6	44.6	22.0	21.5	21.3	23.5
8 years	56.6	50.2	55.0	49.0	26.2	26.0	25.5	25.4
9 years	59.9	57.6	62.0	60.5	30.8	28.4	29.8	29.9
10 years	66.8	62.1	64.0	67.0	33.5	33.3	31.6	33.4
11 years	67.7	68.6	71.8	73.9	38.6	36.8	38.3	39.6
Boys 6-11 years	49.1	50.8	49.4	51.6	26.7	27.4	25.8	27.8
Girls 6-11 years	53.3	48.3	55.9	55.5	27.8	26.0	27.7	28.2

Table 26. Average standard scores for Reading and Arithmetic and combined ratings on the Wide Range Achievement Test for children, by population change from 1950 to 1960 in size of place of residence, age, and sex: United States, 1963-65

Age and sex	Rate of population change											
	Loss	Below-average gain	Average gain	Above-average gain	Loss	Below-average gain	Average gain	Above-average gain	Loss	Below-average gain	Average gain	Above-average gain
Both sexes	Reading standard score				Arithmetic standard score				Combined standard score			
6-11 years--	...	...	...	...	...	...	...	...	97.3	100.5	100.1	102.1
6 years	98.6	101.0	101.2	101.7	98.4	98.0	100.2	103.6	97.9	99.9	100.4	102.4
7 years	97.3	99.8	100.7	102.5	96.4	99.5	100.6	102.3	97.0	99.9	100.6	102.2
8 years	99.0	100.4	99.8	101.7	97.4	101.9	101.1	100.7	97.7	101.0	100.2	101.2
9 years	96.4	101.3	100.4	102.2	97.4	100.8	101.1	102.4	96.6	100.8	100.4	102.3
10 years	97.7	100.6	98.7	103.3	97.7	101.2	99.8	102.5	97.3	100.7	98.8	103.0
11 years	96.7	100.4	99.7	103.0	98.1	100.1	100.7	102.8	97.5	100.6	100.4	101.6
Boys												
6-11 years--	...	...	...	...	...	...	...	...	96.2	99.3	99.0	100.7
6 years	98.3	101.0	99.4	99.4	97.7	99.1	99.1	102.6	97.8	100.1	99.4	100.5
7 years	96.0	96.7	99.2	100.4	95.4	96.7	99.8	102.0	95.7	97.4	99.6	101.0
8 years	96.6	97.3	97.3	98.2	96.4	101.1	100.3	99.5	95.8	99.5	99.0	99.0
9 years	95.3	100.0	98.0	100.1	96.6	100.2	100.2	101.4	95.7	99.7	98.7	100.6
10 years	95.6	99.3	97.4	103.4	96.2	100.0	98.8	102.2	95.5	99.7	97.5	103.1
11 years	94.9	99.6	98.2	100.6	97.2	99.3	100.1	100.9	96.7	99.2	99.3	99.6
Girls												
6-11 years--	...	...	...	...	...	...	...	...	98.4	101.6	101.4	103.6
6 years	98.7	100.8	103.6	104.8	98.8	98.4	101.6	105.2	98.0	99.7	101.3	104.3
7 years	98.9	102.4	102.0	104.3	97.8	102.0	101.2	102.6	98.3	102.4	101.7	103.5
8 years	100.9	102.6	101.5	104.9	98.1	102.3	101.1	101.5	99.6	102.5	101.3	103.4
9 years	97.4	102.5	102.2	104.4	97.8	101.1	102.0	103.0	97.5	102.0	102.1	104.0
10 years	99.5	101.4	100.2	103.0	98.8	102.2	100.5	102.5	99.1	101.7	100.2	103.0
11 years	98.3	100.9	101.3	105.7	98.7	100.7	101.1	104.8	98.3	102.0	101.5	103.5

Table 27. Average combined standard scores on the Wide Range Achievement Test for white and Negro children, by population change from 1950 to 1960 in size of place of residence, age, and sex: United States, 1963-65

Age and sex	Rate of population change							
	White				Negro			
	Loss	Below average gain	Average gain	Above average gain	Loss	Below average gain	Average gain	Above-average gain
Both sexes	Standard score							
6-11 years	98.4	101.6	103.7	103.3	78.8	92.7	90.1	90.8
6 years	98.4	100.5	103.0	103.2	88.4	95.2	93.0	95.7
7 years	99.0	101.2	104.8	103.4	76.0	89.4	90.4	89.2
8 years	98.6	102.0	103.6	102.8	77.6	95.2	90.0	87.2
9 years	98.0	102.2	104.2	103.0	75.8	91.6	89.2	94.2
10 years	98.2	102.0	103.4	104.7	79.9	88.3	88.2	90.7
11 years	98.4	101.7	104.1	103.0	84.2	94.0	89.6	88.6
Boys 6-11 years	97.6	100.5	102.8	101.8	72.2	90.7	87.6	90.9
Girls 6-11 years	99.2	102.6	104.9	105.0	85.7	94.7	92.6	90.7

Table 28. Averages and standard deviations (SD) of Reading raw scores on the Wide Range Achievement Test for children, by annual family income, age, and sex: United States, 1963-65

Age and sex	Annual family income											
	Less than $3,000		$3,000-$4,999		$5,000-$6,999		$7,000-$9,999		$10,000-$14,999		$15,000 or more	
	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD
	Raw score											
Both sexes												
6-11 years	42.5	12.49	47.7	12.19	52.2	12.41	56.2	12.06	59.0	11.50	60.0	13.00
6 years	20.0	11.01	23.9	9.84	26.5	9.06	28.4	13.43	29.4	13.67	33.8	11.94
7 years	32.6	12.86	37.8	10.97	42.6	10.82	45.7	12.28	49.2	10.16	47.9	12.21
8 years	43.4	13.51	49.2	12.36	52.4	11.72	56.8	10.71	59.7	10.13	58.9	9.63
9 years	49.8	15.69	55.6	14.54	59.8	12.83	62.8	11.93	64.5	12.58	69.9	10.78
10 years	53.5	15.01	61.2	13.33	66.2	13.49	69.9	10.68	72.0	9.32	69.0	13.11
11 years	59.4	11.75	64.5	12.01	69.6	13.22	74.3	10.73	78.2	9.80	81.1	11.34
Boys												
6-11 years	40.8	12.53	45.3	13.18	50.6	12.36	55.3	12.58	57.9	11.46	59.2	14.04
6 years	19.5	11.09	22.9	10.00	25.6	10.70	26.2	13.43	27.6	14.06	35.2	16.32
7 years	31.0	13.82	35.5	10.68	42.0	12.06	42.4	9.44	48.7	9.14	45.3	8.48
8 years	42.0	14.16	46.4	13.23	50.3	12.87	55.4	11.07	57.0	12.29	57.7	15.59
9 years	48.5	15.03	52.4	17.73	59.2	13.32	59.9	10.78	62.6	16.10	70.0	10.21
10 years	50.7	17.96	59.9	14.62	63.8	13.26	69.7	9.93	71.5	11.67	70.7	13.72
11 years	56.8	17.31	61.5	12.75	68.6	12.68	72.0	12.68	78.2	14.36	78.9	13.96
Girls												
6-11 years	44.0	12.45	50.3	11.20	53.7	12.45	57.2	11.63	60.3	11.11	60.9	11.89
6 years	20.3	11.01	25.1	9.92	27.4	7.73	30.1	13.74	31.4	11.55	31.8	13.59
7 years	34.3	10.16	39.6	9.36	43.1	9.65	49.1	11.92	49.5	12.72	51.8	15.57
8 years	45.0	11.57	51.7	10.42	54.5	8.98	58.2	10.13	61.6	8.41	60.0	5.68
9 years	50.7	15.69	58.6	12.42	60.3	12.58	65.9	11.28	66.6	11.19	69.3	9.89
10 years	55.6	11.44	62.4	12.12	68.3	13.11	70.0	12.20	72.5	7.73	67.2	10.76
11 years	61.7	10.07	67.4	12.21	70.3	11.68	76.5	9.19	78.3	7.85	82.7	9.40

Table 29. Averages and standard deviations (SD) of Arithmetic raw scores on the Wide Range Achievement Test for children, by annual family income, age, and sex: United States, 1963-65

Age and sex	Annual family income											
	Less than $3,000		$3,000-$4,999		$5,000-$6,999		$7,000-$9,999		$10,000-$14,999		$15,000 or more	
	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD
	Raw score											
Both sexes												
6-11 years	23.8	5.89	26.1	5.38	27.7	4.93	28.7	4.73	29.7	5.73	30.9	5.98
6 years	13.9	4.88	15.8	3.76	17.7	3.99	18.1	4.28	18.9	4.88	19.8	3.10
7 years	18.9	7.14	21.1	4.89	22.8	3.81	23.6	3.63	23.7	3.71	24.1	5.19
8 years	23.8	5.01	25.6	3.92	26.3	3.55	27.2	3.73	27.4	3.28	28.0	3.64
9 years	26.6	7.74	28.8	4.25	30.1	4.04	30.3	4.04	31.4	4.90	32.6	3.70
10 years	29.0	4.40	31.9	4.40	33.6	5.66	34.5	4.94	35.2	5.76	37.3	7.82
11 years	32.6	4.60	35.9	6.22	37.6	6.56	39.4	6.70	41.1	4.94	43.2	7.92
Boys												
6-11 years	23.4	5.84	25.5	5.98	27.4	4.82	28.7	4.73	29.6	5.84	30.4	5.43
6 years	14.0	4.94	15.3	4.43	17.4	3.99	17.6	4.72	18.4	4.72	20.3	3.18
7 years	18.6	8.51	20.6	5.29	22.6	4.30	23.2	3.32	23.3	2.94	23.6	4.60
8 years	23.6	5.19	25.5	4.10	26.2	3.55	27.0	3.55	27.1	4.19	28.2	3.74
9 years	26.3	6.97	28.0	5.89	30.0	3.93	29.9	4.36	31.1	5.44	32.8	4.25
10 years	27.7	4.23	31.5	3.50	33.4	6.02	34.4	5.31	35.4	6.39	35.7	5.94
11 years	31.7	5.75	35.4	5.41	37.3	6.15	38.4	6.83	40.7	6.42	42.5	8.12
Girls												
6-11 years	24.2	6.04	26.7	4.78	28.1	4.98	28.7	4.83	29.8	5.28	31.5	6.54
6 years	13.9	4.80	16.5	3.10	17.9	4.05	18.5	4.05	19.2	5.09	19.1	4.21
7 years	19.2	6.65	21.5	4.40	22.9	3.32	24.0	2.84	24.0	4.50	24.7	6.06
8 years	23.9	4.74	25.6	3.55	26.5	3.74	27.4	3.55	27.5	2.64	27.6	4.38
9 years	26.8	8.28	29.6	3.59	30.1	4.13	30.7	3.59	31.6	4.04	32.1	3.38
10 years	29.8	4.58	32.1	4.77	33.8	4.86	34.7	4.60	34.9	4.77	38.4	9.80
11 years	33.4	4.19	36.3	6.83	37.9	7.04	40.3	6.56	41.4	3.38	43.7	8.05

Table 30. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for white and Negro children, by annual family income, age, and sex: United States, 1963-65

Race, age, and sex	Annual family income					
	Less than $3,000	$3,000-$4,999	$5,000-$6,999	$7,000-$9,999	$10,000-$14,999	$15,000 or more
White						
	Reading raw score					
Both sexes 6-11 years	44.7	49.0	52.9	56.5	59.1	59.7
6 years	20.5	24.0	26.5	28.3	29.5	33.8
7 years	36.0	39.0	43.1	46.0	49.3	47.9
8 years	45.4	51.0	53.6	57.0	59.9	58.5
9 years	52.1	57.0	61.3	63.5	64.5	69.9
10 years	56.0	62.9	67.1	70.4	72.1	68.7
11 years	62.2	65.1	70.6	75.0	78.2	80.5
Boys 6-11 years	43.2	46.5	51.6	55.8	57.9	58.9
Girls 6-11 years	46.1	51.6	54.3	57.3	60.4	60.6
	Arithmetic raw score					
Both sexes 6-11 years	24.6	26.5	28.0	28.8	29.7	30.8
6 years	14.3	16.0	17.8	18.2	18.9	19.8
7 years	20.1	21.8	22.9	23.7	23.7	24.1
8 years	24.4	25.7	26.6	27.2	27.4	27.8
9 years	27.3	29.1	30.4	30.4	31.4	32.6
10 years	29.7	32.3	34.0	34.6	35.2	37.3
11 years	34.0	36.2	38.1	39.8	41.1	43.0
Boys 6-11 years	24.3	26.0	27.7	28.8	29.6	30.3
Girls 6-11 years	25.0	27.0	28.2	28.8	29.8	31.4
Negro						
	Reading raw score					
Both sexes 6-11 years	37.8	43.1	45.3	49.9	50.1	-
6 years	19.0	23.7	23.4	31.5	28.8	-
7 years	26.4	32.7	38.7	42.6	49.4	-
8 years	39.2	43.2	43.2	51.6	56.1	-
9 years	44.8	51.2	47.0	53.5	-	-
10 years	48.6	55.0	57.6	60.9	80.1	-
11 years	54.6	62.0	60.0	64.2	-	-
Boys 6-11 years	35.8	41.0	41.5	47.1	53.0	-
Girls 6-11 years	39.7	45.4	48.7	53.8	46.4	-
	Arithmetic raw score					
Both sexes 6-11 years	22.1	24.6	25.4	27.1	25.6	-
6 years	13.3	15.3	15.2	18.0	15.6	-
7 years	16.6	18.5	21.4	23.4	24.4	-
8 years	22.4	25.4	24.6	26.0	29.4	-
9 years	25.2	28.3	27.4	29.1	-	-
10 years	27.4	30.1	30.4	33.3	40.1	-
11 years	30.1	34.7	32.2	34.2	-	-
Boys 6-11 years	21.4	23.8	24.2	26.3	26.7	-
Girls 6-11 years	22.7	25.6	26.6	28.2	24.1	-

Table 31. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children, by annual family income, region, age, and sex: United States, 1963-65

Region, age, and sex	Annual family income					
	Less than $3,000	$3,000-$4,999	$5,000-$6,999	$7,000-$9,999	$10,000-$14,999	$15,000 or more
Northeast	Reading raw score					
Both sexes 6-11 years	45.6	48.7	51.1	55.6	56.9	62.6
6 years	21.3	23.7	24.7	29.2	27.0	29.6
7 years	36.0	37.4	42.0	48.4	47.6	50.2
8 years	45.2	49.3	52.3	58.7	60.8	59.9
9 years	55.0	53.5	58.7	63.6	65.6	72.1
10 years	63.2	63.7	61.8	72.4	73.5	76.1
11 years	61.5	63.2	70.1	75.9	80.4	81.7
Boys 6-11 years	47.1	44.7	50.6	56.8	57.7	57.0
Girls 6-11 years	44.6	52.6	51.6	54.3	55.9	67.9
	Arithmetic raw score					
Both sexes 6-11 years	24.6	26.4	27.6	28.0	28.9	31.8
6 years	15.2	15.5	17.1	18.5	17.8	19.9
7 years	18.5	21.0	23.0	24.3	23.2	26.0
8 years	24.6	26.0	27.2	27.6	27.9	28.0
9 years	27.7	29.1	29.7	30.8	31.8	32.5
10 years	32.0	32.3	32.5	34.6	35.6	37.3
11 years	34.0	34.0	38.2	38.3	43.1	43.3
Boys 6-11 years	25.5	25.5	27.5	28.6	29.2	29.9
Girls 6-11 years	24.0	27.4	27.7	27.3	28.5	33.7
Midwest	Reading raw score					
Both sexes 6-11 years	47.1	50.2	53.1	56.4	59.7	58.9
6 years	17.9	24.5	26.7	26.3	28.3	31.3
7 years	36.0	40.3	44.0	45.3	51.7	44.6
8 years	46.9	52.9	52.7	56.8	59.4	58.0
9 years	55.5	59.5	60.4	64.6	62.0	69.1
10 years	59.5	60.6	69.0	69.2	71.8	70.4
11 years	66.2	67.6	68.7	74.5	76.3	80.6
Boys 6-11 years	44.7	48.4	51.3	54.2	58.0	60.4
Girls 6-11 years	49.4	52.0	54.9	58.5	61.5	56.6
	Arithmetic raw score					
Both sexes 6-11 years	25.8	26.6	28.0	28.6	29.6	29.8
6 years	14.3	16.5	18.0	17.2	18.9	19.1
7 years	21.3	22.0	23.0	23.4	23.2	23.2
8 years	25.3	26.7	26.6	27.1	27.0	26.8
9 years	28.0	29.2	30.3	30.0	30.7	32.3
10 years	30.5	30.8	33.9	34.5	34.9	34.9
11 years	35.5	36.9	36.9	38.7	39.5	40.2
Boys 6-11 years	25.3	26.5	27.5	28.2	29.5	31.0
Girls 6-11 years	26.2	26.7	28.4	28.9	29.8	28.0

Table 31. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children, by annual family income, region, age, and sex: United States, 1963-65—Con.

Region, age, and sex	Annual family income					
	Less than $3,999	$3,000-$4,999	$5,000-$6,999	$7,000-$9,999	$10,000-$14,999	$15,000 or more
South	Reading raw score					
Both sexes 6-11 years	40.9	46.7	51.2	57.2	59.3	58.0
6 years	20.8	24.5	28.1	31.8	29.3	41.5
7 years	30.3	37.0	39.6	47.8	51.4	54.7
8 years	41.2	46.5	52.3	57.8	61.5	56.1
9 years	46.7	52.7	58.4	58.0	66.5	70.1
10 years	51.2	57.8	65.2	71.4	68.6	71.1
11 years	56.8	64.2	69.3	74.7	82.7	80.1
Boys 6-11 years	38.2	45.2	49.2	55.6	55.6	55.4
Girls 6-11 years	43.3	48.5	53.5	58.4	63.5	61.0
	Arithmetic raw score					
Both sexes 6-11 years	23.4	26.2	27.8	29.9	30.4	30.2
6 years	14.2	15.3	18.3	19.0	19.5	21.1
7 years	17.8	21.2	21.6	24.1	24.7	25.0
8 years	23.2	25.4	26.7	27.5	28.3	29.1
9 years	26.2	28.8	30.4	29.9	32.8	34.0
10 years	28.5	31.8	34.3	36.0	37.0	42.6
11 years	31.5	36.6	37.9	41.5	44.5	46.9
Boys 6-11 years	22.4	25.7	27.0	29.8	29.6	29.0
Girls 6-11 years	24.3	26.9	28.8	30.0	31.3	31.6
West	Reading raw score					
Both sexes 6-11 years	41.7	45.8	52.9	56.1	60.3	59.5
6 years	18.8	23.3	27.3	28.8	34.7	31.0
7 years	35.0	36.4	44.1	42.4	47.5	51.0
8 years	45.2	48.1	53.1	55.1	58.6	62.0
9 years	54.7	56.5	61.8	62.3	68.2	67.6
10 years	50.5	63.3	68.6	68.8	71.9	59.8
11 years	62.1	64.2	71.1	73.1	77.6	88.3
Boys 6-11 years	42.1	42.5	51.0	54.9	58.9	62.7
Girls 6-11 years	41.3	48.8	54.8	57.6	61.9	55.3
	Arithmetic raw score					
Both sexes 6-11 years	23.0	25.2	27.5	29.1	30.2	31.6
6 years	12.9	16.1	17.4	18.6	20.4	20.0
7 years	20.2	20.2	23.2	22.8	23.9	24.1
8 years	23.9	24.6	25.4	27.1	27.4	28.5
9 years	27.0	28.9	30.5	30.4	31.7	32.2
10 years	27.7	32.0	34.0	33.9	35.2	38.3
11 years	33.5	36.4	38.3	40.1	40.5	46.4
Boys 6-11 years	23.4	24.4	27.3	29.0	30.0	31.2
Girls 6-11 years	22.5	26.0	27.7	29.3	30.5	32.2

Table 32. Average standard scores in Reading and Arithmetic on the Wide Range Achievement Test for children, by annual family income, age, and sex: United States, 1963-65

Age and sex	Annual family income					
	Less than $3,000	$3,000-$4,999	$5,000-$6,999	$7,000-$9,999	$10,000-$14,999	$15,000 or more
Both sexes	**Reading standard score**					
6 years	93.0	98.3	101.5	104.4	105.4	111.3
7 years	89.9	95.8	101.6	104.7	109.2	107.8
8 years	89.9	96.2	100.4	105.2	108.2	107.4
9 years	90.8	96.6	101.3	104.3	106.2	112.4
10 years	89.0	96.7	102.2	105.9	108.0	105.0
11 years	89.9	95.0	100.1	105.3	109.7	112.6
Boys						
6 years	92.2	96.4	100.4	101.2	103.2	113.2
7 years	88.0	93.2	101.0	101.4	108.7	104.3
8 years	88.5	93.4	97.4	103.4	105.5	106.2
9 years	89.5	93.4	100.7	101.4	104.1	112.5
10 years	86.2	95.4	99.3	105.7	107.5	106.7
11 years	86.8	92.0	99.1	102.5	109.7	110.4
Girls						
6 years	93.4	99.6	102.8	106.2	108.1	108.7
7 years	91.8	97.9	102.1	109.1	109.5	111.8
8 years	91.5	99.6	102.5	106.7	110.4	108.5
9 years	91.7	100.1	101.8	107.9	108.9	111.8
10 years	91.1	97.9	104.3	106.0	108.5	103.2
11 years	92.2	97.9	100.8	108.0	109.8	114.2
Both sexes	**Arithmetic standard score**					
6 years	90.7	96.4	103.0	104.3	106.7	109.8
7 years	88.6	96.4	102.3	104.8	105.1	106.4
8 years	91.3	98.1	100.7	104.2	104.9	107.0
9 years	90.6	98.2	102.4	103.0	106.7	110.9
10 years	89.5	97.7	102.0	104.5	106.5	112.2
11 years	89.7	97.2	100.7	104.5	108.2	112.5
Boys						
6 years	91.0	94.9	101.9	102.6	105.2	111.4
7 years	87.6	94.8	101.6	103.6	103.9	104.8
8 years	90.6	97.8	100.3	103.5	103.8	107.7
9 years	89.6	95.0	102.0	101.7	105.8	111.7
10 years	86.1	96.5	101.5	104.2	107.0	107.8
11 years	87.8	95.7	100.1	102.3	107.4	111.0
Girls						
6 years	90.7	98.8	103.6	105.5	107.7	107.4
7 years	89.8	97.8	102.6	106.0	106.0	108.8
8 years	91.6	98.1	101.5	104.9	105.2	105.6
9 years	91.3	100.8	102.4	104.4	107.3	108.9
10 years	91.9	98.2	102.5	105.1	105.7	115.2
11 years	91.3	98.1	101.3	106.6	108.8	113.8

Table 33. Average combined standard scores on the Wide Range Achievement Test for children, by annual family income, age, and sex: United States, 1963-65

Age and sex	Annual family income					
	Less than $3,000	$3,000-$4,999	$5,000-$6,999	$7,000-$9,999	$10,000-$14,999	$15,000 or more
	Combined standard score					
Both sexes						
6-11 years	89.8	96.6	101.3	104.6	107.0	109.0
6 years	91.4	97.6	101.4	103.8	105.6	109.6
7 years	89.2	96.0	102.0	105.1	107.2	108.2
8 years	90.2	97.0	100.3	104.5	107.0	107.8
9 years	89.9	97.0	101.5	104.0	106.8	111.4
10 years	87.8	96.6	102.2	105.3	107.8	108.8
11 years	90.0	95.4	100.6	104.9	107.9	108.9
Boys						
6-11 years	88.1	94.8	100.4	102.8	106.2	108.9
6 years	90.9	96.0	100.7	101.8	105.0	112.3
7 years	87.7	93.8	101.5	102.2	106.7	104.8
8 years	88.6	94.9	98.9	103.3	105.4	107.9
9 years	88.8	93.7	100.9	101.7	105.3	112.2
10 years	84.9	95.4	100.6	105.0	107.7	108.1
11 years	87.6	94.7	99.5	102.6	106.7	108.3
Girls						
6-11 years	91.4	98.6	102.3	106.4	107.9	109.1
6 years	91.9	99.2	102.0	105.8	106.2	106.8
7 years	90.6	98.3	102.4	108.0	107.6	111.6
8 years	91.7	99.2	101.7	105.7	108.6	107.6
9 years	91.0	100.4	102.1	106.2	108.2	110.7
10 years	90.8	97.8	103.7	105.6	107.8	109.5
11 years	92.3	96.2	101.8	107.2	109.1	109.5

Table 34. Average combined standard scores on the Wide Range Achievement Test for white and Negro children, by annual family income, age, and sex: United States, 1963-65

Race, age, and sex	Annual family income					
	Less than $3,000	$3,000-$4,999	$5,000-$6,999	$7,000-$9,999	$10,000-$14,999	$15,000 or more
	Standard score					
White						
Both sexes 6-11 years	92.3	97.7	102.3	105.0	107.1	108.8
6 years	92.2	97.8	101.8	104.1	105.7	109.6
7 years	93.6	98.0	102.5	105.3	107.3	108.2
8 years	92.9	98.0	101.4	104.7	107.0	107.2
9 years	92.5	98.4	103.0	104.3	106.8	111.4
10 years	90.2	98.2	103.2	105.8	107.8	108.4
11 years	92.7	95.7	101.9	105.5	107.9	108.6
Boys 6-11 years	91.3	96.1	101.5	103.3	106.2	108.6
Girls 6-11 years	93.3	99.3	103.2	106.7	108.0	109.0
Negro						
Both sexes 6-11 years	84.7	92.8	92.1	98.0	102.4	-
6 years	89.8	97.1	94.0	102.1	-	-
7 years	81.2	87.5	96.5	101.4	-	-
8 years	84.4	93.6	89.6	99.0	*	-
9 years	84.4	92.2	89.3	97.3	-	-
10 years	82.6	90.6	91.4	96.6	-	-
11 years	85.2	94.3	90.2	95.2	-	-
Boys 6-11 years	81.7	90.3	89.5	95.8	102.4	-
Girls 6-11 years	87.4	95.7	94.4	101.0	102.3	-

Table 35. Average Reading raw scores on the Wide Range Achievement Test for children, by education of parent, age, and sex: United States, 1963-65

Age and sex	Years of schooling completed[1]							
	Less than 5 years	5-7 years	8 years	9-11 years	12 years	13-15 years	16 years	17 years or more
	Raw score							
Both sexes								
6-11 years	39.4	45.6	49.9	49.8	53.6	55.9	59.4	61.4
6 years	19.2	20.4	23.1	24.7	26.6	30.2	30.6	33.0
7 years	28.2	35.8	38.5	39.7	44.0	45.9	49.3	51.6
8 years	38.6	44.6	48.9	51.7	54.8	57.7	60.2	60.5
9 years	44.7	50.8	55.7	57.7	61.5	66.1	69.3	67.1
10 years	50.1	56.3	61.9	61.9	68.0	71.6	69.6	75.7
11 years	55.0	61.3	65.3	69.0	72.0	76.6	80.0	79.3
Boys								
6-11 years	37.5	43.6	48.0	48.3	51.8	56.2	58.6	60.2
6 years	19.3	19.5	20.9	23.0	26.5	30.2	29.4	31.1
7 years	25.3	35.5	38.0	38.2	42.3	45.3	47.0	47.8
8 years	35.5	39.7	45.8	50.1	52.7	54.3	59.5	58.6
9 years	42.0	49.3	53.8	56.7	59.5	63.3	68.1	62.5
10 years	47.5	56.2	59.8	61.1	65.4	71.1	72.4	75.7
11 years	53.4	59.6	60.9	67.1	70.6	74.4	80.3	78.8
Girls								
6-11 years	41.4	47.6	51.5	51.4	55.4	55.6	60.2	62.7
6 years	19.0	21.5	24.7	26.5	26.7	30.1	32.1	35.5
7 years	31.2	35.8	38.9	41.1	45.6	46.3	51.5	53.4
8 years	41.7	48.4	51.0	53.4	57.5	60.3	60.4	61.8
9 years	46.4	52.5	57.6	58.7	63.4	68.0	70.8	69.6
10 years	51.9	56.4	63.8	62.6	70.5	71.7	65.7	74.9
11 years	56.9	62.5	68.8	70.7	73.2	79.2	79.5	79.8

[1] By the father or if he is not in the home, the mother or guardian.

Table 36. Average Arithmetic raw scores on the Wide Range Achievement Test for children, by education of parent, age, and sex: United States, 1963-65

Age and sex	Years of schooling completed[1]							
	Less than 5 years	5-7 years	8 years	9-11 years	12 years	13-15 years	16 years	17 years or more
	Raw score							
Both sexes								
6-11 years	23.0	25.4	27.0	26.7	27.9	28.7	30.0	30.5
6 years	13.0	14.3	16.0	16.3	17.7	19.4	18.8	19.5
7 years	17.4	20.3	21.2	21.9	22.9	24.0	24.3	24.5
8 years	22.2	24.6	25.3	26.2	26.9	26.8	27.6	28.1
9 years	25.3	27.3	29.1	29.0	30.2	31.8	32.5	31.9
10 years	27.8	30.4	31.4	31.9	34.1	35.5	36.3	36.5
11 years	31.5	33.6	35.9	37.4	38.5	41.0	41.5	41.8
Boys								
6-11 years	22.5	24.8	26.7	26.2	27.6	29.3	29.4	30.8
6 years	12.9	14.1	15.5	15.6	17.7	19.4	18.7	19.4
7 years	16.8	20.2	21.2	21.5	22.6	24.2	23.1	24.0
8 years	21.2	24.1	25.3	26.0	26.6	26.8	27.4	28.1
9 years	24.5	26.9	29.1	28.8	29.7	31.4	32.7	31.1
10 years	26.7	30.2	30.9	31.8	33.5	35.2	36.3	36.3
11 years	31.3	32.9	34.4	36.8	38.2	40.1	40.6	42.3
Girls								
6-11 years	23.4	25.9	27.2	27.1	28.3	28.2	30.5	30.1
6 years	13.1	14.5	16.4	17.0	17.6	19.3	18.8	19.6
7 years	18.0	20.3	21.1	22.2	23.2	23.4	25.4	24.6
8 years	23.2	24.9	25.3	26.3	27.2	26.8	27.7	28.0
9 years	25.7	27.6	29.1	29.4	30.6	31.9	32.1	32.1
10 years	28.5	30.5	31.8	32.0	34.6	35.6	36.3	36.5
11 years	31.7	34.0	37.1	37.9	38.8	41.9	42.3	40.7

[1] By the father or if he is not in the home, the mother or guardian.

Table 37. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for white children, by education of parent, age, and sex: United States, 1963-65

Age and sex	Years of schooling completed[1]							
	Less than 5 years	5-7 years	8 years	9-11 years	12 years	13-15 years	16 years	17 years or more
Both sexes	Reading raw score							
6-11 years	40.6	47.9	51.1	51.4	54.3	56.2	59.6	61.1
6 years	18.8	20.6	23.6	25.7	26.4	30.2	30.5	33.0
7 years	28.8	38.6	39.4	41.4	44.9	46.3	49.7	51.3
8 years	38.9	48.3	49.8	53.6	55.8	58.4	60.7	60.1
9 years	46.5	53.4	56.9	58.8	62.3	66.4	69.8	67.0
10 years	50.3	59.3	63.1	64.6	69.2	71.9	69.5	75.5
11 years	56.7	64.0	66.2	70.1	72.8	77.3	80.7	78.9
Boys 6-11 years	39.7	45.8	48.9	50.2	52.6	56.6	58.9	59.9
Girls 6-11 years	41.4	50.0	53.2	52.7	56.2	55.9	60.5	62.6
Both sexes	Arithmetic raw score							
6-11 years	23.5	26.2	27.5	27.2	28.2	28.8	30.0	30.4
6 years	13.1	14.2	16.4	16.8	17.8	19.4	18.7	19.5
7 years	17.8	21.5	21.6	22.4	23.2	24.0	24.3	24.6
8 years	22.4	25.6	25.6	26.4	27.1	27.0	27.7	28.0
9 years	25.8	28.0	29.4	29.4	30.3	31.9	32.6	31.8
10 years	27.9	31.7	31.9	32.7	34.4	35.4	36.4	36.5
11 years	32.4	35.2	36.4	38.0	39.0	41.2	41.7	42.0
Boys 6-11 years	23.5	25.7	27.1	26.9	27.9	29.4	29.4	30.8
Girls 6-11 years	23.5	26.7	27.9	27.4	28.6	28.2	30.7	30.0

[1]By the father or if he is not in the home, the mother or guardian.

Table 38. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for Negro children, by education of parent, age, and sex: United States, 1963-65

Age and sex	Years of schooling completed [1]							
	Less than 5 years	5-7 years	8 years	9-11 years	12 years	13-15 years	16 years	17 years or more
Both sexes	Reading raw score							
6-11 years	36.5	41.1	40.9	42.4	45.2	49.1	50.4	62.1
6 years	20.5	20.1	20.6	19.1	28.6	31.4	43.5	-
7 years	27.1	29.7	32.5	32.7	35.6	35.9	38.9	57.9
8 years	38.2	38.8	42.2	42.7	46.2	51.0	53.5	55.8
9 years	41.2	44.3	49.7	52.2	52.8	56.2	50.8	76.5
10 years	49.7	51.3	50.6	52.5	55.5	69.7	79.4	72.9
11 years	51.1	57.2	57.6	63.9	63.0	40.0	70.0	81.0
Boys 6-11 years	32.0	40.0	39.6	39.0	4: 5	49.7	52.8	66.7
Girls 6-11 years	41.3	42.5	41.7	45.6	47.0	48.1	46.3	60.5
Both sexes	Arithmetic raw score							
6-11 years	21.6	23.8	23.4	24.4	24.9	27.2	27.6	29.2
6 years	13.2	14.4	14.4	13.8	16.6	20.0	28.0	-
7 years	16.6	17.7	18.1	19.7	20.1	23.1	20.9	23.1
8 years	22.0	23.0	24.2	25.2	25.3	26.0	26.2	25.5
9 years	24.1	25.4	28.1	27.7	28.4	28.4	33.5	45.5
10 years	27.8	28.5	26.4	29.2	30.7	36.4	39.6	37.3
11 years	30.0	31.4	32.4	34.0	33.3	33.0	42.5	35.7
Boys 6-11 years	19.9	23.5	23.5	23.1	24.2	27.5	29.2	28.3
Girls 6-11 years	23.4	24.2	23.4	25.6	25.6	26.6	24.7	29.5

[1] By the father or if he is not in the home, the mother or guardian.

Table 39. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children, by education of parent, age, and sex: United States, 1963-65

Age and sex	Years of schooling completed[1]							
	None	1-8 years—elementary	9-12 years—high school	13 years or more—college	None	1-8 years—elementary	9-12 years—high school	13 years or more—college
	Reading raw score				Arithmetic raw score			
Both sexes								
6-11 years	38.1	46.5	52.1	58.3	22.6	25.7	27.4	29.5
6 years	18.2	22.2	26.3	31.0	14.8	15.2	17.3	19.2
7 years	30.1	35.2	42.4	48.1	18.1	20.1	22.5	24.1
8 years	39.5	45.3	53.5	59.2	22.1	24.5	26.6	27.4
9 years	38.7	51.5	60.1	67.4	23.0	27.6	29.8	32.0
10 years	47.2	57.4	65.7	71.9	27.2	30.2	33.3	36.0
11 years	54.8	61.3	69.4	76.9	31.0	33.9	37.2	40.2
Boys								
6-11 years	38.2	44.4	50.6	57.9	22.8	25.3	27.0	29.6
6 years	15.2	21.2	25.5	30.2	13.3	15.1	17.0	19.2
7 years	23.7	34.0	40.8	46.3	18.4	19.8	22.3	23.8
8 years	36.0	41.2	51.7	57.3	20.7	24.0	26.3	27.4
9 years	43.1	49.5	58.4	65.4	22.4	27.4	29.4	31.9
10 years	25.7	56.4	63.9	72.8	18.3	29.9	32.9	35.9
11 years	60.5	57.7	68.3	76.0	33.8	32.6	37.0	39.7
Girls								
6-11 years	38.0	48.6	53.8	58.8	22.4	26.2	27.8	29.4
6 years	20.0	23.1	27.0	31.8	15.6	15.4	17.6	19.2
7 years	30.3	36.4	43.8	50.0	17.5	20.3	22.8	24.5
8 years	40.4	48.6	55.8	60.8	22.2	24.9	26.9	27.4
9 years	35.4	53.5	61.7	69.5	22.8	27.8	30.2	32.0
10 years	51.9	58.4	67.4	70.7	28.9	30.6	33.6	36.1
11 years	46.3	64.6	70.5	78.0	26.6	35.1	37.4	40.7

[1]By the father or if he is not in the home, the mother or guardian.

Table 40. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children, by education of parent, region, age, and sex: United States, 1963-65

Region, age, and sex	Years of schooling completed [1]							
	None	1-8 years—elementary	9-12 years—high school	13 years or more—college	None	1-8 years—elementary	9-12 years—high school	13 years or more—college
	Reading raw score				Arithmetic raw score			
Northeast								
Both sexes 6-11 years--	42.2	48.3	52.7	57.4	26.0	26.4	27.7	29.0
6 years	*	24.1	25.0	29.8	*	15.1	17.3	18.7
7 years	*	34.5	44.0	48.3	*	20.2	23.1	24.7
8 years	*	45.9	55.4	59.8	*	25.5	27.2	28.4
9 years	*	53.8	60.3	69.1	*	28.5	30.0	32.7
10 years	*	60.8	66.1	74.3	*	31.3	33.6	35.6
11 years	*	61.8	72.3	80.2	*	34.0	38.3	41.9
Boys 6-11 years	45.2	46.1	52.7	56.7	29.3	25.8	27.8	29.0
Girls 6-11 years	39.5	50.6	52.7	58.1	23.1	27.2	27.5	29.0
Midwest								
Both sexes 6-11 years--	34.5	50.8	53.0	60.8	19.9	27.2	27.6	29.9
6 years	*	23.5	25.2	29.4	*	17.1	16.9	19.2
7 years	*	40.3	43.2	47.9	*	22.0	22.6	24.0
8 years	*	50.4	53.9	59.8	*	25.6	26.9	26.8
9 years	*	55.1	61.4	68.0	*	28.4	29.7	32.0
10 years	*	62.9	66.6	72.5	*	31.3	33.3	35.7
11 years	*	66.7	70.2	81.4	*	36.3	37.4	40.4
Boys 6-11 years	-	47.9	50.6	61.4	-	26.8	27.0	30.6
Girls 6-11 years	34.5	53.5	55.6	60.1	19.9	27.7	28.2	29.1
South								
Both sexes 6-11 years--	35.1	43.1	50.2	57.1	20.9	24.8	27.1	29.6
6 years	17.8	21.3	27.0	34.0	11.2	14.3	17.1	20.0
7 years	28.4	32.1	39.1	50.3	17.9	18.9	21.5	24.6
8 years	38.1	41.4	50.6	60.0	21.7	23.8	25.8	28.4
9 years	*	47.8	57.7	64.9	*	26.9	29.6	32.3
10 years	48.9	53.7	62.3	74.3	25.8	29.7	32.7	37.9
11 years	52.2	58.5	70.8	77.1	29.5	33.1	38.8	42.4
Boys 6-11 years	35.8	40.7	47.9	55.4	20.8	24.1	26.2	28.9
Girls 6-11 years	34.8	45.3	52.8	58.8	21.0	25.4	28.1	30.4
West								
Both sexes 6-11 years--	39.6	45.4	51.6	58.5	23.3	24.6	27.2	30.0
6 years	*	18.5	26.8	31.2	*	13.2	17.3	19.2
7 years	*	35.2	41.5	47.1	*	19.6	22.4	23.7
8 years	*	45.8	53.6	58.8	*	24.1	26.2	27.2
9 years	*	55.9	59.4	66.1	*	28.2	29.8	31.1
10 years	*	56.8	66.5	69.1	*	29.2	33.4	36.0
11 years	*	62.8	70.6	77.6	*	34.3	38.6	41.8
Boys 6-11 years	36.7	44.3	49.9	58.0	22.0	24.6	26.8	30.0
Girls 6-11 years	41.9	46.5	53.3	59.0	24.4	24.6	27.7	29.9

[1] By the father or if he is not in the home, the mother or guardian.

Table 41. Average Reading standard scores on the Wide Range Achievement Test for children, by education of parent, age, and sex: United States, 1963-65

Age and sex	Years of schooling completed[1]							
	Less than 5 years	5-7 years	8 years	9-11 years	12 years	13-15 years	16 years	17 years or more
	Standard score							
Both sexes								
6 years	91.8	93.5	96.7	99.2	101.6	106.3	106.9	110.5
7 years	84.7	93.7	96.5	98.0	103.0	104.9	109.3	111.6
8 years	84.4	91.1	95.9	99.6	102.8	106.2	108.7	109.0
9 years	85.2	91.8	96.7	99.0	103.0	108.2	111.8	109.6
10 years	85.6	91.8	97.4	97.4	104.0	107.6	105.6	111.7
11 years	84.5	91.8	95.8	99.5	102.5	108.1	111.5	110.8
Boys								
6 years	92.0	92.2	94.4	96.5	101.5	106.3	105.4	107.6
7 years	81.4	93.2	96.0	96.2	101.3	104.3	106.5	107.7
8 years	80.0	85.7	92.7	97.2	100.7	102.3	108.0	107.1
9 years	82.0	90.3	94.8	97.7	101.0	104.8	110.6	104.0
10 years	82.0	91.7	95.3	96.6	101.4	107.1	108.4	111.7
11 years	82.9	90.1	91.4	97.6	101.1	105.4	111.8	110.3
Girls								
6 years	91.5	95.0	99.2	101.5	101.7	106.2	109.2	113.5
7 years	88.2	93.7	96.9	99.6	104.6	105.4	111.5	113.8
8 years	88.2	95.4	98.5	101.4	106.0	108.8	108.9	110.7
9 years	86.9	93.5	98.9	100.2	104.9	110.5	113.3	112.1
10 years	87.4	91.9	99.3	98.1	106.5	107.7	101.7	110.9
11 years	86.9	93.0	99.3	101.2	103.8	110.7	111.0	111.3

[1]By the father or if he is not in the home, the mother or guardian.

Table 42. Average Arithmetic standard scores on the Wide Range Achievement Test for children, by education of parent, age, and sex: United States, 1963-65

Age and sex	Years of schooling completed[1]							
	Less than 5 years	5-7 years	8 years	9-11 years	12 years	13-15 years	16 years	17 years or more
	Standard score							
Both sexes								
6 years	88.0	91.9	97.0	98.0	103.0	108.4	106.4	108.8
7 years	83.4	93.6	96.7	99.2	102.6	106.0	107.2	108.0
8 years	85.7	94.4	97.0	100.3	103.1	102.7	105.6	107.4
9 years	86.0	92.9	99.3	99.0	102.7	107.9	110.5	108.2
10 years	86.4	93.5	96.2	97.7	103.3	107.2	109.4	110.0
11 years	87.2	91.7	97.2	100.3	102.5	108.0	109.0	109.6
Boys								
6 years	87.6	91.3	95.5	95.8	103.0	108.4	106.1	108.4
7 years	81.4	93.6	96.7	97.8	101.6	106.8	103.3	106.0
8 years	81.8	92.4	97.0	99.5	101.9	102.7	104.9	107.4
9 years	83.2	91.6	99.3	98.2	101.1	106.7	111.3	105.8
10 years	83.1	93.0	94.8	97.4	101.8	106.5	109.4	109.4
11 years	86.8	90.3	93.3	99.1	101.9	106.2	107.2	110.6
Girls								
6 years	88.3	92.5	98.4	100.5	102.6	108.0	106.4	109.1
7 years	85.5	93.9	96.4	100.2	103.6	104.2	111.4	108.4
8 years	89.2	95.6	97.0	100.7	104.2	102.7	106.0	107.0
9 years	87.4	93.8	99.3	100.2	104.1	108.2	108.9	108.9
10 years	88.2	93.8	97.4	98.0	104.8	107.5	109.4	110.0
11 years	87.8	92.5	99.7	101.3	103.1	109.8	110.6	107.4

[1]By the father or if he is not in the home, the mother or guardian.

Table 43. Average combined standard scores on the Wide Range Achievement Test for children, by education of parent, age, and sex: United States, 1963-65

Age and sex	Years of schooling completed[1]							
	Less than 5 years	5-7 years	8 years	9-11 years	12 years	13-15 years	16 years	17 years or more
	Standard score							
Both sexes								
6-11 years	85.6	92.3	96.6	98.6	102.8	106.5	108.4	109.3
6 years	89.2	92.3	96.2	98.0	102.4	106.5	106.6	109.2
7 years	84.0	92.8	97.6	98.4	102.8	106.0	108.4	110.0
8 years	84.6	92.1	95.4	99.7	103.0	104.2	107.6	109.2
9 years	84.4	91.6	97.5	98.8	102.8	107.9	111.4	108.2
10 years	84.1	92.1	96.2	97.2	103.6	107.8	107.8	111.4
11 years	87.6	92.5	96.2	99.6	102.1	107.5	109.0	107.7
Boys								
6-11 years	83.7	90.8	94.8	97.1	101.4	105.9	107.8	108.3
6 years	89.9	91.2	95.4	95.5	102.5	107.1	106.0	108.0
7 years	81.4	92.9	97.4	96.8	101.4	106.5	104.8	108.0
8 years	80.0	88.2	93.4	98.2	101.1	102.3	107.4	108.3
9 years	82.2	89.9	96.5	97.4	100.9	106.2	111.2	105.3
10 years	81.6	91.6	94.2	96.6	101.3	107.3	109.9	111.7
11 years	86.5	91.2	92.3	98.4	101.4	105.7	107.7	107.6
Girls								
6-11 years	87.5	93.8	98.2	100.1	104.1	107.1	109.1	110.5
6 years	88.4	93.4	97.0	100.6	102.4	105.9	107.2	110.3
7 years	86.5	92.8	97.8	100.0	104.2	105.6	111.9	111.9
8 years	89.2	96.0	97.4	101.2	104.9	106.0	107.8	110.1
9 years	86.6	93.4	98.5	100.1	104.7	109.6	111.7	111.1
10 years	86.6	92.6	98.3	97.9	105.8	108.4	105.8	111.0
11 years	88.6	93.8	100.1	100.9	102.8	109.3	110.2	107.8

[1]By the father or if he is not in the home, the mother or guardian.

Table 44. Average combined standard scores on the Wide Range Achievement Test for white and Negro children, by education of parent, age, and sex: United States, 1963-65

Race, age, and sex	Years of schooling completed[1]							
	Less than 5 years	5-7 years	8 years	9-11 years	12 years	13-15 years	16 years	17 years or more
	Standard score							
White								
Both sexes 6-11 years	86.4	95.3	97.6	100.2	103.6	106.8	108.6	109.3
6 years	88.4	93.2	97.0	99.5	102.7	106.4	106.4	109.2
7 years	85.2	96.6	98.6	100.2	103.9	106.4	108.8	110.0
8 years	85.6	96.4	96.2	101.2	104.0	104.8	107.9	109.0
9 years	86.2	94.0	98.6	99.8	103.6	108.4	111.6	108.2
10 years	84.4	95.4	97.8	99.7	104.7	108.0	108.0	111.6
11 years	88.9	96.0	97.0	101.0	102.8	107.8	109.4	107.4
Boys 6-11 years	85.1	94.8	95.8	98.6	102.3	106.	108.1	108.2
Girls 6-11 years	87.7	95.8	99.3	101.8	104.9	107.3	109.3	110.6
Negro								
Both sexes 6-11 years	83.5	86.5	89.6	91.3	94.1	99.8	*	*
6 years	92.0	91.0	93.8	90.6	100.9	110.8	-	-
7 years	81.7	84.3	88.8	90.6	91.6	99.2	*	-
8 years	81.3	86.1	88.4	92.9	93.4	98.6	*	*
9 years	80.5	86.8	90.1	93.1	94.8	95.0	-	-
10 years	83.2	86.1	81.6	87.8	91.3	103.4	-	-
11 years	83.4	87.9	90.0	93.9	92.5	-	-	-
Boys 6-11 years	80.3	84.1	86.2	89.8	92.1	98.4	*	*
Girls 6-11 years	86.9	89.5	91.7	92.7	96.1	102.0	*	*

[1]By the father or if he is not in the home, the mother or guardian.

Table 45. Average Reading raw scores on the Wide Range Achievement Test for children, by grade in school, age, and sex: United States, 1963-65

Age and sex	Grade in school								
	Kinder-garten	First grade	Second grade	Third grade	Fourth grade	Fifth grade	Sixth grade	Seventh grade	Special class
Both sexes	Raw score								
6-11 years	19.4	26.2	42.7	53.4	60.7	66.5	73.0	76.7	32.0
6 years	19.4	24.9	39.3	-	-	-	-	-	23.1
7 years	*	30.6	43.3	53.4	-	-	-	-	28.7
8 years	-	29.0	45.1	54.6	60.4	-	-	-	24.3
9 years	-	24.0	34.8	51.9	62.0	66.0	-	-	31.7
10 years	-	*	30.4	46.8	59.2	68.0	71.4	*	33.2
11 years	-	-	21.6	43.6	53.5	62.5	73.3	76.8	43.6
Boys									
6-11 years	19.8	25.6	41.7	51.3	59.9	65.5	73.4	76.7	31.6
6 years	19.6	24.4	37.2	-	-	-	-	-	21.7
7 years	*	29.7	42.5	51.3	-	-	-	-	*
8 years	-	24.7	44.0	52.8	58.0	-	-	-	*
9 years	-	*	35.4	49.2	61.6	64.7	-	-	27.3
10 years	-	*	*	46.0	58.7	67.8	74.2	-	30.4
11 years	-	-	*	*	52.2	61.1	73.3	76.7	45.7
Girls									
6-11 years	19.1	26.9	43.7	55.6	61.5	67.4	72.6	76.7	32.8
6 years	19.1	25.5	41.1	-	-	-	-	-	*
7 years	-	31.6	44.1	54.9	-	-	-	-	*
8 years	-	*	46.3	56.2	62.2	-	-	-	*
9 years	-	*	*	55.5	62.4	67.4	-	-	36.4
10 years	-	-	*	46.9	59.6	68.2	68.7	*	37.4
11 years	-	-	*	*	54.3	64.6	73.3	76.8	*

Table 46. Average Arithmetic raw scores on the Wide Range Achievement Test for children, by grade in school, age, and sex: United States, 1963-65

Age and sex	Grade in school								
	Kinder-garten	First grade	Second grade	Third grade	Fourth grade	Fifth grade	Sixth grade	Seventh grade	Special class
Both sexes	Raw score								
6-11 years	14.9	17.2	22.8	26.6	30.4	33.7	38.4	39.9	19.0
6 years	14.9	16.8	21.5	-	-	-	-	-	13.6
7 years	*	18.5	22.9	25.3	-	-	-	-	17.6
8 years	-	19.0	23.7	26.7	29.7	-	-	-	14.3
9 years	-	15.2	21.5	27.1	30.6	32.7	-	-	19.3
10 years	-	*	*	26.7	30.8	33.9	38.0	*	19.0
11 years	-	-	*	25.9	29.2	33.8	38.5	39.9	25.7
Boys									
6-11 years	14.8	17.1	22.7	26.4	30.5	33.8	38.2	40.7	19.0
6 years	14.7	16.6	21.5	-	-	-	-	-	13.7
7 years	*	18.6	22.8	25.1	-	-	-	-	15.6
8 years	-	17.7	23.8	26.6	29.5	-	-	-	16.6
9 years	-	*	21.1	26.4	30.7	32.8	-	-	17.8
10 years	-	*	*	26.8	30.9	34.0	38.0	-	17.5
11 years	-	-	*	26.2	29.1	33.7	38.3	40.7	26.6
Girls									
6-11 years	15.0	17.3	22.8	26.8	30.3	33.7	38.4	39.4	19.0
6 years	15.0	16.9	21.5	-	-	-	-	-	13.5
7 years	-	18.4	23.0	25.4	-	-	-	-	*
8 years	-	20.7	23.5	26.8	29.8	-	-	-	11.3
9 years	-	13.1	21.7	27.9	30.4	32.5	-	-	20.6
10 years	-	-	*	26.3	30.6	33.9	37.8	*	21.3
11 years	-	-	7.0	*	29.3	33.8	38.6	39.4	22.1

Table 47. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for white children, by grade in school, age, and sex: United States, 1963-65

Age and sex	Grade in school								
	Kinder-garten	First grade	Second grade	Third grade	Fourth grade	Fifth grade	Sixth grade	Seventh grade	Special class
Both sexes	Reading raw score								
6-11 years	20.6	26.9	44.0	55.1	61.8	68.1	73.2	73.7	30.8
6 years	20.5	25.4	39.9	-	-	-	-	-	23.1
7 years	*	32.1	44.6	54.3	-	-	-	-	29.7
8 years	-	30.5	46.5	56.1	61.7	-	-	-	22.7
9 years	-	22.9	37.7	54.3	63.0	67.6	-	-	31.3
10 years	-	*	33.6	47.8	60.4	69.7	72.4	*	29.4
11 years	-	-	14.9	47.5	54.4	63.8	73.5	74.0	47.9
Boys 6-11 years	20.7	26.4	43.0	53.2	60.7	67.0	73.1	74.9	30.2
Girls 6-11 years	20.4	27.4	45.0	57.0	63.0	69.2	73.4	72.9	31.7
Both sexes	Arithmetic raw score								
6-11 years	15.5	17.6	23.2	26.8	30.7	34.2	38.9	40.2	18.3
6 years	15.5	17.2	21.8	-	-	-	-	-	13.6
7 years	*	19.3	23.3	25.5	-	-	-	-	18.5
8 years	-	19.2	24.3	26.9	29.9	-	-	-	13.2
9 years	-	13.8	23.0	27.6	30.8	33.0	-	-	19.1
10 years	-	*	20.0	26.6	31.2	34.4	38.1	*	16.7
11 years	-	-	14.0	27.8	29.6	34.5	39.0	40.3	27.3
Boys 6-11 years	15.4	17.6	23.2	26.7	30.7	34.3	38.6	41.1	18.5
Girls 6-11 years	15.6	17.6	23.2	27.0	30.7	34.1	39.1	39.5	18.0

Table 48. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for Negro children, by grade in school, age, and sex: United States, 1963-65

Age and sex	Grade in school								
	Kinder-garten	First grade	Second grade	Third grade	Fourth grade	Fifth grade	Sixth grade	Seventh grade	Special class
Both sexes	Reading raw score								
6-11 years	13.6	22.7	35.1	42.9	52.3	56.2	63.0	68.6	35.5
6 years	13.6	22.4	33.3	-	-	-	-	-	-
7 years	-	24.2	35.0	43.6	-	-	-	-	17.7
8 years	-	23.0	39.0	44.3	50.9	-	-	-	34.0
9 years	-	*	27.3	41.3	54.7	53.8	-	-	41.2
10 years	-	-	27.3	42.5	50.0	56.6	68.8	-	36.3
11 years	-	-	44.3	31.1	48.9	57.4	62.4	68.6	38.8
Boys 6-11 years	13.5	21.9	34.0	39.9	51.9	55.9	64.0	69.8	34.6
Girls 6-11 years	13.7	23.6	36.3	46.4	52.6	56.5	62.2	68.0	*40.1
Both sexes	Arithmetic raw score								
6-11 years	11.8	14.8	20.1	25.0	28.4	30.5	34.5	36.2	21.1
6 years	12.0	14.7	18.3	-	-	-	-	-	-
7 years	-	14.9	20.3	23.3	-	-	-	-	7.7
8 years	-	18.8	21.0	25.4	28.8	-	-	-	20.6
9 years	-	*	17.9	24.9	29.0	30.8	-	-	24.2
10 years	-	-	20.2	26.4	27.8	30.6	37.0	-	21.4
11 years	-	-	24.7	21.4	27.6	30.7	34.3	36.2	24.6
Boys 6-11 years	10.7	14.4	20.0	24.6	28.8	30.4	34.8	35.8	20.1
Girls 6-11 years	12.6	15.3	20.2	25.4	28.0	30.7	34.2	36.4	*26.0

Table 49. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children in the Northeast, by grade in school, age, and sex: United States, 1963-65

Age and sex	Grade in school								
	Kindergarten	First grade	Second grade	Third grade	Fourth grade	Fifth grade	Sixth grade	Seventh grade	Special class
Both sexes	Reading raw score								
6-11 years	23.5	24.3	41.9	53.8	61.2	67.2	74.9	78.2	31.9
6 years	23.5	23.0	40.5	-	-	-	-	-	21.9
7 years	-	32.9	42.4	53.3	-	-	-	-	22.4
8 years	-	*	43.1	55.4	60.2	-	-	-	-
9 years	-	-	*	48.9	63.2	67.7	-	-	21.3
10 years	-	-	*	48.0	57.3	69.5	75.2	-	41.5
11 years	-	-	-	-	48.5	60.3	75.0	78.2	38.5
Boys 6-11 years	*26.7	24.0	41.5	52.8	60.3	66.2	75.8	78.1	33.6
Girls 6-11 years	18.6	24.6	42.3	54.6	62.1	68.4	74.0	78.4	27.6
Both sexes	Arithmetic raw score								
6-11 years	15.9	16.8	22.6	26.5	30.2	33.5	39.0	42.6	20.0
6 years	15.9	16.4	22.1	-	-	-	-	-	12.0
7 years	-	19.6	22.8	25.5	-	-	-	-	16.0
8 years	-	*	23.0	27.0	29.7	-	-	-	-
9 years	-	-	*	26.2	30.6	33.5	-	-	19.1
10 years	-	-	*	28.9	30.1	33.9	38.4	-	24.5
11 years	-	-	-	-	28.2	32.5	39.3	42.9	22.6
Boys 6-11 years	17.6	16.8	22.4	26.3	30.3	33.6	39.4	43.1	21.1
Girls 6-11 years	13.3	16.9	22.8	26.7	30.1	33.5	38.6	42.1	17.4

Table 50. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children in the Midwest, by grade in school, age, and sex: United States, 1963-65

Age and sex	Grade in school								
	Kindergarten	First grade	Second grade	Third grade	Fourth grade	Fifth grade	Sixth grade	Seventh grade	Special class
Both sexes	Reading raw score								
6-11 years	17.8	25.6	44.0	54.4	62.1	68.0	73.5	76.7	32.3
6 years	17.2	23.1	40.8	-	-	-	-	-	24.4
7 years	*	34.1	44.0	54.6	-	-	-	-	27.9
8 years	-	46.6	47.3	55.0	62.4	-	-	-	29.9
9 years	-	-	45.0	54.1	62.8	70.2	-	-	40.4
10 years	-	-	-	48.1	62.1	68.6	74.5	71.3	30.1
11 years	-	-	-	56.7	53.4	63.7	73.4	76.9	44.1
Boys 6-11 years	17.8	24.4	42.7	51.9	60.9	67.1	73.0	76.4	28.9
Girls 6-11 years	17.8	27.1	45.3	57.0	63.4	69.0	73.9	76.8	37.2
Both sexes	Arithmetic raw score								
6-11 years	14.8	17.4	23.2	26.6	30.3	33.4	38.1	42.3	19.2
6 years	14.8	16.7	21.6	-	-	-	-	-	15.5
7 years	*	19.9	23.1	24.7	-	-	-	-	20.5
8 years	-	26.9	24.4	26.7	29.7	-	-	-	16.6
9 years	-	-	28.9	28.0	30.3	32.5	-	-	22.8
10 years	-	-	-	26.0	31.7	33.7	38.7	*	15.2
11 years	-	-	-	20.0	27.6	33.4	38.0	42.4	28.6
Boys 6-11 years	13.4	17.4	23.3	26.3	30.4	33.4	38.1	42.8	18.1
Girls 6-11 years	15.8	17.5	23.0	26.8	30.1	33.4	38.0	42.0	20.9

Table 51. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children in the South, by grade in school, age, and sex: United States, 1963-65

Age and sex	Grade in school								
	Kindergarten	First grade	Second grade	Third grade	Fourth grade	Fifth grade	Sixth grade	Seventh grade	Special class
Both sexes	Reading raw score								
6-11 years	24.6	25.4	39.2	49.2	56.5	61.9	69.6	72.6	36.8
6 years	*	25.3	35.0	-	-	-	-	-	*
7 years	-	26.0	41.7	51.6	-	-	-	-	*
8 years	-	24.9	40.0	51.1	59.4	-	-	-	*
9 years	-	28.6	27.1	47.4	58.4	58.2	-	-	*
10 years	-	*	31.2	43.5	53.6	63.8	65.0	-	*
11 years	-	-	21.6	36.7	50.8	59.3	70.4	73.5	*
Boys 6-11 years	30.9	24.7	37.6	46.2	56.3	61.6	69.4	73.8	38.1
Girls 6-11 years	17.4	26.2	40.9	52.6	56.7	62.1	69.7	71.3	35.6
Both sexes	Arithmetic raw score								
6-11 years	15.1	16.2	21.8	25.9	30.1	33.0	38.4	40.1	20.1
6 years	15.1	16.2	20.5	-	-	-	-	-	25.5
7 years	-	16.4	22.3	25.4	-	-	-	-	26.7
8 years	-	16.9	22.9	26.1	30.2	-	-	-	16.6
9 years	-	16.5	19.5	26.4	30.5	31.3	-	-	21.0
10 years	-	10.2	18.4	25.5	29.5	33.5	35.5	-	39.0
11 years	-	-	15.6	23.0	29.5	33.0	39.0	40.1	23.6
Boys 6-11 years	15.4	15.9	21.8	25.3	30.3	32.9	38.1	40.5	21.1
Girls 6-11 years	14.8	16.6	21.8	26.6	29.8	33.1	38.6	39.6	19.1

Table 52. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children in the West, by grade in school, age, and sex: United States, 1963-65

Age and sex	Grade in school								
	Kindergarten	First grade	Second grade	Third grade	Fourth grade	Fifth grade	Sixth grade	Seventh grade	Special class
Both sexes	Reading raw score								
6-11 years	17.0	29.0	45.6	55.8	62.5	68.2	74.0	79.1	30.3
6 years	17.1	28.2	41.8	-	-	-	-	-	26.0
7 years	-	31.8	45.4	56.1	-	-	-	-	29.7
8 years	-	30.6	48.0	56.7	59.3	-	-	-	18.6
9 years	-	*	39.4	57.5	63.5	63.4	-	-	30.2
10 years	-	-	38.1	48.0	62.8	70.3	60.6	-	26.7
11 years	-	-	-	47.5	58.0	65.8	75.6	80.2	46.2
Boys 6-11 years	13.5	29.0	44.9	54.1	61.5	66.3	75.3	80.7	*31.0
Girls 6-11 years	20.5	29.0	46.4	57.9	63.5	70.3	72.8	78.6	*28.1
Both sexes	Arithmetic raw score								
6-11 years	14.5	18.2	23.4	28.3	31.2	34.9	41.0	42.8	17.7
6 years	14.5	17.9	21.8	-	-	-	-	-	7.2
7 years	-	19.2	23.4	27.0	-	-	-	-	17.2
8 years	-	19.0	24.1	27.2	29.5	-	-	-	11.9
9 years	-	*	22.1	28.0	31.2	33.0	-	-	18.2
10 years	-	-	27.3	26.8	31.6	35.0	40.6	-	15.0
11 years	-	-	-	29.5	30.3	35.5	41.3	43.4	27.8
Boys 6-11 years	13.6	18.4	23.2	27.6	31.1	35.1	41.2	37.9	17.9
Girls 6-11 years	15.3	18.0	23.6	27.0	31.2	34.7	40.8	44.3	17.1

Table 53. Average combined standard scores on the Wide Range Achievement Test for children, by grade in school, age, and sex: United States, 1963-65

Age and sex	Grade in school								
	Kinder-garten	First grade	Second grade	Third grade	Fourth grade	Fifth grade	Sixth grade	Seventh grade	Special class
Both sexes	Standard score								
6-11 years	97.3	96.3	100.2	100.1	101.5	102.0	104.8	105.0	70.6
6 years	97.4	99.6	111.4	-	-	-	-	-	89.5
7 years	-	89.4	102.5	109.0	-	-	-	-	89.7
8 years	-	75.3	92.4	102.4	109.2	-	-	-	58.4
9 years	-	53.4	72.3	93.3	103.8	108.0	-	-	66.2
10 years	-	-	62.2	82.0	95.0	103.6	109.0	-	62.4
11 years	-	-	45.0	74.4	84.3	94.5	104.0	105.2	73.0
Boys									
6-11 years	97.6	95.5	98.8	97.9	100.8	101.3	104.7	106.3	70.9
6 years	97.8	99.2	109.9	-	-	-	-	-	*
7 years	*	88.9	101.7	107.4	-	-	-	-	*
8 years	-	69.0	91.9	101.0	107.7	-	-	-	*
9 years	-	*	72.3	90.0	103.8	107.6	-	-	61.1
10 years	-	*	*	82.2	94.9	103.4	110.7	-	*
11 years	-	-	*	73.4	83.8	93.4	103.6	106.3	77.0
Girls									
6-11 years	97.1	97.2	101.5	102.4	102.3	102.8	104.8	104.2	69.9
6 years	97.1	99.9	112.8	-	-	-	-	-	*
7 years	-	89.9	103.3	110.5	-	-	-	-	100.3
8 years	-	*	92.9	103.8	110.8	-	-	-	*
9 years	-	*	*	96.6	103.9	108.4	-	-	*
10 years	-	-	*	81.7	95.2	103.7	107.4	*	67.1
11 years	-	-	*	*	84.8	95.6	104.4	104.2	*

Table 54. Average combined standard scores on the Wide Range Achievement Test for white and Negro children, by grade in school, age, and sex: United States, 1963-65

Race, age, and sex	Grade in school								
	Kinder-garten	First grade	Second grade	Third grade	Fourth grade	Fifth grade	Sixth grade	Seventh grade	Special class
	Standard score								
White									
Both sexes 6-11 years	99.2	97.7	102.2	101.8	102.7	103.8	106.0	105.4	71.4
6 years	99.3	100.5	112.0	-	-	-	-	-	89.5
7 years	-	91.6	104.0	109.9	-	-	-	-	90.7
8 years	-	76.9	94.6	103.7	110.4	-	-	-	57.2
9 years	-	-	77.0	95.4	104.8	109.4	-	-	64.8
10 years	-	-	63.6	82.6	96.5	105.2	109.8	-	53.4
11 years	-	-	42.0	78.1	85.4	96.0	105.3	105.6	74.8
Boys 6-11 years	99.4	97.2	100.9	100.0	101.5	103.0	105.6	106.8	72.9
Girls 6-11 years	98.9	98.2	103.5	103.8	104.0	104.6	106.4	104.4	69.2
Negro									
Both sexes 6-11 years	87.9	88.9	87.8	89.3	92.8	91.1	96.0	99.3	68.0
6 years	87.6	94.0	102.8	-	-	-	-	-	-
7 years	-	79.2	92.4	100.1	-	-	-	-	-
8 years	-	67.5	83.3	92.8	100.5	-	-	-	-
9 years	-	-	59.8	83.0	97.4	95.2	-	-	-
10 years	-	-	-	79.5	85.2	92.1	105.6	-	66.8
11 years	-	-	-	-	79.0	88.4	94.4	99.4	72.2
Boys 6-11 years	85.8	86.8	85.7	85.5	93.6	90.3	97.0	99.6	66.7
Girls 6-11 years	89.3	91.4	89.9	93.5	92.3	92.0	95.4	99.1	74.4

Table 55. Average combined standard scores on the Wide Range Achievement Test for children, by grade in school, region, age, and sex: United States, 1963-65

Region, age, and sex	Grade in school								
	Kinder-garten	First grade	Second grade	Third grade	Fourth grade	Fifth grade	Sixth grade	Seventh grade	Special class
	Standard score								
Northeast									
Both sexes 6-11 years	102.7	97.1	102.5	102.9	103.6	103.6	106.4	108.0	70.2
6 years	101.2	98.2	112.6	-	-	-	-	-	85.0
7 years	-	92.0	102.4	108.6	-	-	-	-	-
8 years	-	-	89.8	103.8	109.0	-	-	-	-
9 years	-	-	-	89.0	104.8	110.4	-	-	55.7
10 years	-	-	-	86.5	93.2	104.7	111.6	-	72.4
11 years	-	-	-	-	80.4	92.0	104.8	108.0	-
Boys 6-11 years	108.3	96.7	100.9	101.0	102.4	103.2	107.2	107.5	73.5
Girls 6-11 years	94.1	97.4	104.0	104.5	104.7	104.2	105.6	108.4	62.3
Midwest									
Both sexes 6-11 years	95.3	97.2	103.0	101.7	102.8	103.0	105.5	105.8	74.7
6 years	95.0	98.2	111.6	-	-	-	-	-	94.0
7 years	-	94.3	103.2	108.6	-	-	-	-	-
8 years	-	96.8	95.4	103.0	110.2	-	-	-	69.2
9 years	-	-	90.2	95.4	103.8	109.8	-	-	69.8
10 years	-	-	-	82.6	98.0	103.4	111.0	-	53.4
11 years	-	-	-	-	82.8	94.2	104.0	106.4	78.8
Boys 6-11 years	91.8	96.1	101.1	99.4	101.9	101.7	105.5	108.9	72.6
Girls 6-11 years	97.9	98.4	104.7	104.1	103.8	104.4	105.4	104.0	77.8
South									
Both sexes 6-11 years	102.5	93.2	94.9	94.6	97.5	98.2	101.9	101.7	73.2
6 years	102.2	99.0	106.6	-	-	-	-	-	-
7 years	-	83.1	100.2	107.4	-	-	-	-	-
8 years	-	68.0	88.0	98.2	109.4	-	-	-	-
9 years	-	59.2	63.6	89.0	101.7	100.0	-	-	66.5
10 years	-	-	61.5	78.6	89.8	100.5	101.1	-	-
11 years	-	-	45.0	67.1	82.6	91.6	101.8	101.8	88.1
Boys 6-11 years	108.4	92.3	93.5	91.2	97.3	98.2	100.7	103.1	74.6
Girls 6-11 years	96.0	94.3	96.3	98.4	97.6	98.2	102.8	100.4	72.0
West									
Both sexes 6-11 years	94.6	98.2	100.1	100.8	101.8	103.2	105.3	97.1	66.0
6 years	94.6	102.6	119.2	-	-	-	-	-	-
7 years	-	90.9	104.0	114.2	-	-	-	-	87.6
8 years	-	75.5	94.3	104.1	107.3	-	-	-	60.4
9 years	-	-	75.3	97.6	105.4	107.4	-	-	67.9
10 years	-	-	-	83.0	98.0	106.0	107.6	-	60.1
11 years	-	-	-	79.6	88.0	98.0	105.4	94.7	78.4
Boys 6-11 years	91.2	97.6	99.9	99.9	101.1	101.8	104.5	90.2	67.2
Girls 6-11 years	97.9	98.8	100.4	101.9	102.6	104.6	106.0	99.2	62.1

APPENDIX I

STATISTICAL NOTES

The Survey Design

The sample design for the second cycle of the Health Examination Survey, similar to the one used for the first cycle, was that of a multistage, stratified probability sample of loose clusters of persons in land-based segments. Successive elements dealt with in the process of sampling are the primary sampling unit (PSU), census enumeration district (ED), segment, household, eligible child (EC), and the sample child (SC).

At the first stage, the nearly 2,000 PSU's into which the United States (including Hawaii and Alaska) had been divided and then grouped into 357 strata for use in the Current Population Survey and Health Interview Survey were further grouped into 40 superstrata for use in Cycle II of the Health Examination Survey. The average size of each Cycle II stratum was 4.5 million persons, and all strata fell between the limits of 3.5 and 5.5 million. Grouping into 40 strata was done in a way that maximized homogeneity of the PSU's included in each stratum, particularly with regard to the degree of urbanization, geographic proximity, and degree of industrialization. The 40 strata were classified into four broad geographic regions (each with 10 strata) of approximately equal population and cross-classified into four broad population density groups (each having 10 strata). Each of the 16 cells contained either two or three strata. A single stratum might include only one PSU (or only part of a PSU, for example, New York City which represented two strata) or several score PSU's.

To take account of the possible effect that the rate of population change between the 1950 and 1960 Census might have had on health, the 10 strata within each region were further classified into four classes ranging from those with no increase to those with the greatest relative increase. Each such class contained two or three strata.

One PSU was then selected from each of the 40 strata. A controlled selection technique was used in which the probability of selection of a particular PSU was proportional to its 1960 population. In the controlled selection an attempt was also made to maximize the spread of the PSU's among the States. While not every one of the 64 cells in the 4x4x4 grid contributes a PSU to the sample of 40 PSU's the controlled selection technique ensured the sample's matching the marginal distributions in all three dimensions and being closely representative of all cross-classifications.

Generally, within a particular PSU, 20 ED's were selected with the probability of selection of a particular ED proportional to its population in the age groups 5-9 years in the 1960 Census, which by 1963 roughly approximated the population in the target age group for Cycle II. A similar method was used for selecting one segment (cluster of households) in each ED. Each of the resultant 20 segments was either a bounded area or a cluster of households (or addresses). All of the children in the age range properly resident at the address visited were EC. Operational considerations made it necessary to reduce the number of prospective examinees at any one location to a maximum of 200. The EC's to be excluded for this reason from the SC group were determined by systematic subsampling.

The total sample included 7,417 children from 25 different States in the age group 6-11 years with approximately 1,000 in each of the single years of age.

Reliability

Measurement processes employed in the survey were highly standardized and closely controlled. Of course, this does not mean that the correspondence between the real world and the survey results is exact. Data from the survey are imperfect for three major reasons: (1) results are subject to sampling error, (2) the actual conduct of a survey never agrees perfectly with the design, and (3) the measurement processes themselves are inexact even though standardized and controlled.

The first report on Cycle II [4] describes in detail the faithfulness with which the sample design

was carried out. It notes that out of the 7,417 sample children the 7,119 who were examined—a response rate of 96 percent—gave evidence that they were a highly representative sample of children of this age in the noninstitutional population of the United States. The response levels for the various demographic subgroups—including those for age, sex, race, region, population density, parents' educational level, and family income—show no marked differentials. Hence, it appears unlikely that nonresponse could bias the findings much in these respects. The number of examinees aged 6-11 years by region, race, size of place of residence, family income, and education of parent is shown in table I.

Measures used to control the quality of the data from this survey in general have been cited previously; [4] those relating specifically to the Wide Range Achievement Test are outlined in an earlier section of this report.

Data recorded for each sample child are inflated in the estimation process to characterize the larger universe of which the sample child is representative. The weights used in this inflation process are a product of the reciprocal of the probability of selecting the child, an adjustment for nonresponse cases, and a poststratified ratio adjustment which increases precision by bringing survey results into closer alignment with known U.S. population figures by color and sex within single years of age 6 through 11.

In the second cycle of the Health Examination Survey the sample was the result of three stages of selection—the single PSU from each stratum, the 20 segments from each sample PSU, and the sample children from the eligible children. The probability of selecting an individual child is the product of the probabilities of selection at each stage.

Since the strata are roughly equal in population size and a nearly equal number of sample children were examined in each of the sample PSU's the sample design is essentially self-weighting with respect to the target population; that is, each child 6-11 years had about the same probability of being drawn into the sample.

Table I. Number of examinees aged 6-11 years by region, race, urban-rural residence, family income, and education of parent: Health Examination Survey, 1963-65

Characteristic	Number of examinees	Region				Races	
		Northeast	Midwest	South	West	White	Negro
	Number of children						
Total	7,119	1,782	1,896	1,707	1,734	...	...
Race							
White	6,100	1,577	1,712	1,237	1,574	...	...
Negro	987	202	176	470	139	...	...
Other races	32	3	8	0	21	...	...
Residence							
Urban area	4,796	1,389	1,285	910	1,212	3,972	806
Rural area	2,323	393	611	797	522	2,128	181
Income							
Less than $3,000	1,223	140	203	629	251	801	418
$3,000-$4,999	1,280	266	337	348	329	1,000	279
$5,000-$6,999	1,652	500	482	297	373	1,479	157
$7,000-$9,999	1,451	435	454	203	359	1,377	71
$10,000-$14,999	813	235	259	99	220	802	10
$15,000 or more	329	100	90	60	79	326	-
Unknown	371	106	71	71	123	315	52
Education of parent							
Less than 5 years	472	47	23	261	141	333	139
5-7 years	656	128	90	325	113	429	225
8 years	787	164	293	171	159	689	98
9-11 years	1,466	428	422	305	311	1,198	256
12 years	2,192	580	702	352	558	1,995	191
13-15 years	550	144	155	86	165	524	26
16 years	537	148	121	98	170	518	14
17 years or more	373	126	73	76	98	362	8
Unknown	86	17	17	33	19	52	30

The adjustment upward for nonresponse is intended to minimize the impact of this factor on final estimates by imputing to nonrespondents the characteristics of "similar" respondents. Here "similar" respondents were judged to be examined children in a sample PSU having the same age (in years) and sex as children not examined in that sample PSU.

The poststratified ratio adjustment used in the second cycle achieved most of the gains in precision which would have been attained if the sample had been drawn from a population stratified by age, color, and sex and made the final sample estimates of population agree exactly with independent controls prepared by the Bureau of the Census for the noninstitutional population of the United States as of August 1, 1964 (approximate mid-survey point) by color and sex for each single year of age 6 through 11. The weight of every responding sample child in each of the 24 age, color, and sex classes is adjusted upward or downward so that the weighted total within the class equals the independent population control.

In addition to children not examined at all, there were some whose examination was incomplete in one procedure or another. The extent and the methods

Table II. Standard errors of estimates for mean raw scores and standard scores on the Wide Range Achievement Test for children, by race, region, and selected ages; and the number of examinees in the sample: United States, 1963-65

Test, race, and region	Number of examinees 6-11 years	Both sexes 6-11 years	Boys				Girls			
			6-11 years	6 years	9 years	11 years	6-11 years	6 years	9 years	11 years
Reading raw score		Standard error of estimate for population means								
White	6,100	0.47	0.49	0.70	0.52	0.53	0.51	0.80	0.57	0.82
Negro	987	0.95	1.35	0.94	2.44	1.94	0.76	0.98	2.20	1.13
Other races	32	4.89	4.36	16.18	4.50	28.91	6.58	14.58	20.05	32.10
Northeast	1,782	0.66	1.15	0.73	0.75	1.08	0.80	1.06	0.72	1.39
Midwest	1,896	0.76	0.93	1.29	1.02	1.22	0.88	0.92	0.81	1.82
South	1,707	1.42	1.56	1.11	1.61	1.59	1.40	2.05	1.98	1.46
West	1,734	1.48	1.63	1.49	1.49	0.67	1.69	2.46	1.20	1.37
Arithemetic raw score										
White	------	0.22	0.26	0.31	0.32	0.36	0.22	0.38	0.17	0.48
Negro	------	0.47	0.71	0.44	1.08	0.90	0.31	0.46	0.64	0.66
Other races	------	1.26	1.20	9.26	1.40	17.50	1.80	7.49	9.65	16.46
Northeast	------	0.28	0.44	0.56	0.47	0.73	0.30	0.52	0.17	0.84
Midwest	------	0.37	0.52	0.36	0.57	0.69	0.29	0.30	0.30	0.53
South	------	0.64	0.72	0.61	0.81	0.70	0.59	0.65	0.57	1.04
West	------	0.65	0.79	0.78	0.59	0.51	0.64	0.98	0.46	0.89
Standard score										
White	------	0.62	0.65	0.97	0.78	0.70	0.63	1.03	0.59	0.81
Negro	------	1.31	1.94	0.97	3.34	1.89	0.79	1.23	2.32	1.12
Other races	------	2.63	4.69	50.54	5.03	46.60	3.18	41.67	32.65	41.14
Northeast	------	0.73	0.95	1.40	1.15	1.10	0.75	1.16	0.60	1.52
Midwest	------	0.92	1.04	1.38	1.31	1.11	0.85	0.86	0.81	0.92
South	------	1.67	1.79	1.58	2.29	1.47	1.57	2.26	2.16	1.86
West	------	1.57	1.64	2.23	1.79	1.27	1.53	3.17	1.39	1.26
		Number of examinees								
Total	------	7,119	3,632	575	603	628	3,487	536	581	564

Table III. Standard errors of estimates for mean raw scores and standard scores on the Wide Range Achievement Test for white and Negro children, by sex and region : United States, 1963-65

Test and sex	Northeast		Midwest		South		West	
	White	Negro	White	Negro	White	Negro	White	Negro
Reading raw score	Standard error of estimate for population means							
Both sexes	0.39	2.07	0.76	1.27	1.21	2.08	1.76	5.45
Boys	0.93	2.22	1.00	1.58	1.11	2.74	1.85	9.55
Girls	0.55	2.56	0.90	2.15	1.43	1.94	2.00	3.05
Arithmetic raw score								
Both sexes	0.15	1.02	0.45	0.68	0.51	1.06	0.70	2.17
Boys	0.31	1.00	0.64	1.19	0.50	1.55	0.81	3.25
Girls	0.25	1.32	0.35	0.48	0.60	0.70	0.72	1.41
Standard score								
Both sexes	0.50	1.25	1.09	1.62	1.38	2.62	1.81	3.47
Boys	0.61	1.74	1.23	2.81	1.19	3.76	1.89	5.64
Girls	0.63	1.46	0.99	1.02	1.63	1.52	1.78	2.50

used for estimating missing data for the Wide Range Achievement Test were described in a previous report.[9]

Sampling and Measurement Error

In the present report, reference has been made to efforts to minimize bias and variability of measurement technique.

The probability design of the survey makes possible the calculation of sampling errors. The sampling error is used here to determine how imprecise the survey test results may be because they come from a sample rather than from the measurement of all elements in the universe.

The estimation of sampling errors for a study of the type of the Health Examination Survey is difficult for at least three reasons: (1) measurement error and "pure" sampling error are confounded in the data—it is not easy to find a procedure which will either completely include both or treat one or the other separately, (2) the survey design and estimation procedure are complex and accordingly require computationally involved techniques for the calculation of variances, and (3) from the survey are coming thousands of statistics, many for subclasses of the population for which there are a small number of cases. Estimates of sampling error are obtained from the sample data and are themselves subject to sampling error which may be large when the number of cases in a cell is small or even occasionally when the number of cases is substantial.

Estimates of approximate sampling variability for selected statistics used in this report are presented in tables II-IV. These estimates have been prepared by a replication technique which yields overall variability through observation of variability among random subsamples of the total sample as described previously.[12] This method reflects both "pure" sampling variance and a part of the measurement variance. A similar pseudoreplication technique was used to estimate the standard errors of the correlation coefficients shown in the Findings and Discussion sections.[13]

In accordance with usual practice, the interval estimate for any statistic may be considered the range within one standard error of the tabulated statistic with 68-percent confidence, or the range within two standard errors of the tabulated statistic with 95-percent confidence. The latter is used as the level of significance in this report.

Table IV. Standard errors of estimates for mean raw scores and standard scores on the Wide Range Achievement Test for children, by selected socioeconomic and other characteristics; and the number of examinees in the sample: United States, 1963-65

Characteristic	Number of examinees 6-11 years	Children 6-11 years		
		Reading raw score	Arithmetic raw score	Standard score
		Standard error of estimate for population means		
Urban area				
3 million or more	1,493	0.85	0.32	0.95
1-2.9 million	964	0.76	0.65	1.53
250,000-999,999	808	1.15	0.67	1.18
Less than 250,000	572	3.66	0.90	2.38
25,000 or more	341	3.02	1.47	4.67
10,000-24,999	210	3.74	1.14	2.61
2,500-9,999	408	0.97	0.54	0.62
Rural area	2,323	0.92	0.39	1.09
Population change				
Loss	1,827	1.22	0.49	1.38
Below-average gain	1,688	1.53	0.48	1.55
Average gain	1,889	1.01	0.52	1.28
Above-average gain	1,715	0.61	0.21	0.60
Income				
Less than $3,000	1,223	1.26	0.53	1.41
$3,000-4,999	1,280	0.74	0.26	0.54
$5,000-6,999	1,652	0.53	0.25	0.54
$7,000-9,999	1,451	0.41	0.21	0.62
$10,000-14,999	813	0.97	0.44	0.85
$15,000 or more	329	1.31	0.62	1.50
Education of parent				
Less than 5 years	472	1.57	0.66	1.46
5-7 years	656	1.14	0.46	0.99
8 years	787	0.62	0.30	0.73
9-11 years	1,466	0.64	0.22	0.61
12 years	2,192	0.34	0.24	0.42
13-15 years	550	1.03	0.33	0.81
16 years	537	0.75	0.31	0.87
17 years or more	373	0.96	0.50	0.98
None	76	3.57	1.61	2.60
Elementary	1,837	0.79	0.31	0.60
High school	3,658	0.41	0.23	0.65
College	1,460	0.45	0.21	0.60
Grade				
Kindergarten	94	1.93	0.50	2.30
First	1,127	1.17	0.39	1.15
Second	1,258	0.62	0.28	0.74
Third	1,249	0.57	0.29	0.66
Fourth	1,208	0.61	0.25	0.61
Fifth	1,078	0.35	0.33	0.47
Sixth	791	0.58	0.37	0.57
Seventh	167	1.00	0.87	1.46
Special class	100	1.91	1.01	3.17
Not in school	47	---	---	---

An approximation of the standard error of a difference $\underline{d} = \underline{x} - \underline{y}$ of two statistics $\underline{x}$ and $\underline{y}$ is given by the formula $S_o = (S_x^2 + S_y^2)^{1/2}$ where $S_{\underline{x}}$ and $S_{\underline{y}}$ are the sampling errors, respectively, of $\underline{x}$ and $\underline{y}$.

Small Categories

In some tables, magnitudes are shown for cells for which the sample size is so small that the sampling error may be several times as great as the statistic itself. Obviously in such instances the statistic has no meaning in itself except to indicate that the true quantity is small. Such numbers, if shown, have been included in the belief that they may help to convey an impression of the overall story of the table.

Standard Scores and Grade Equivalents

The following formula was used for computing the standard scores (SS) shown in this report:

$$SS_i = \frac{1}{s_{x_i}} (15)(x - \bar{x}_i) + 100$$

where s_{x_i} is the standard deviation of the raw scores in the i^{th} age interval, $\bar{x}_i$, is the arithmetic mean or average raw score in that age interval (both s_{x_i} and $\bar{x}_i$ are derived from the inflated sample data from this study) and x is the raw score for which the raw score is being derived. The combined standard scores are derived in the same manner except that the means and standard deviations used in the formula are from the distribution of Reading and Arithmetic standard scores combined for the weighted sample as described previously.[9]

The deviation of the grade equivalents of the raw scores from this study have also been described previously.[9] Those shown in this report are those derived from the smoothed averages within grade subdivisions for the Reading subtest and the respective linear regression equations for the Arithmetic subtest and the combined scores.

APPENDIX II

DEMOGRAPHIC AND SOCIOECONOMIC VARIABLES AND RELATED TERMS

Age.—The age recorded for each child was the age at last birthday on the date of examination. The age criterion for inclusion in the sample used in this survey was defined in terms of age at time of interview. Since the examination usually took place 2 to 4 weeks after the interview, some of those who were 11 years old at the time of interview became 12 years old by the time of examination. There were 72 such cases. In the adjustment and weighting procedures used to produce national estimates these 72 were included in the 11-year-old group.

Race.—Race was recorded as "white," "Negro," or "other races." The last category included American Indians, Chinese, Japanese, and all races other than white or Negro. Mexican persons were included with "white" unless definitely known to be American Indian or of another race. Negroes and persons of mixed Negro and other parentage were recorded as "Negro."

Geographic region.—For purposes of stratification the United States was divided into four broad geographic regions of approximately equal population. These regions, which correspond closely to those used by the U.S. Bureau of the Census, were as follows:

Region	*States Included*
Northeast	Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, and Pennsylvania
Midwest	Ohio, Illinois, Indiana, Michigan, Wisconsin, Minnesota, Iowa, and Missouri
South	Delaware, Maryland, District of Columbia, West Virginia, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and Arkansas
West	Washington, Oregon, California, Nevada, New Mexico, Arizona, Texas, Oklahoma, Kansas, Nebraska, North Dakota, South Dakota, Idaho, Utah, Colorado, Montana, Wyoming, Alaska, and Hawaii

Urban and rural areas.—The definition of urban and rural areas was the same as that used in the 1960 Census. According to this definition, the urban population was comprised of all persons living in (a) places of 2,500 inhabitants or more incorporated as cities, boroughs, villages, and towns (except towns in New England, New York, and Wisconsin); (b) the densely settled urban fringe, whether incorporated or unincorporated, of urbanized areas; (c) towns in New England and townships in New Jersey and Pennsylvania which contained no incorporated municipalities as subdivisions and had either 2,500 inhabitants or more, or a population of 2,500 to 25,000 and a density of 1,500 persons or more per square mile; (d) counties in States other than the New England States, New Jersey, and Pennsylvania that had no incorporated municipalities within their boundaries and had a density of 1,500 persons or more per square mile; and (e) unincorporated places of 2,500 inhabitants or more not included in any urban fringe. The remaining population was classified as rural.

Urban areas are further classified by population size for places within urbanized areas and other urban places outside urbanized areas.

Grade in school.—The grade that the child attended at the time of interview was used and later verified against school records. The grade of children on summer vacation was considered to be the grade that they would enter when school resumed.

Education of parent.—The highest grade completed in school was recorded. The only grades counted were those attended in a regular public or private school where persons were given formal education, whether during the day or at night, and whether attendance was full or part time. A "regular" school is one which advances a person toward an elementary or high school diploma, or a college, university, or professional school degree. Education in vocational, trade, or business schools outside the regular school system was not counted in determining the highest grade of school completed.

Family income.—The income recorded was the total income received during the past 12 months by the head of the household and all other household members related to the head by blood, marriage, or adoption. This income was the gross cash income (excluding pay in kind) except in the case of a family with its own farm or business, in which case net income was recorded.

Parent.—A parent was the natural parent or, in the case of adoption, the legal parent of the child.

Guardian.—A guardian was responsible for the care and supervision of the child. He (or she) did not have to be the legal guardian to be considered the guardian for this survey. A guardianship could only exist when the parent(s) of the child did not reside within the sample household.

Head of household.—Only one person in each household was designated as the "head." He (or she) was the person who was regarded as the "head" by the members of the household. In most cases the head was the chief breadwinner of the family although this was not always true. In some cases the head was the parent of the chief earner or the only adult member of the household.

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